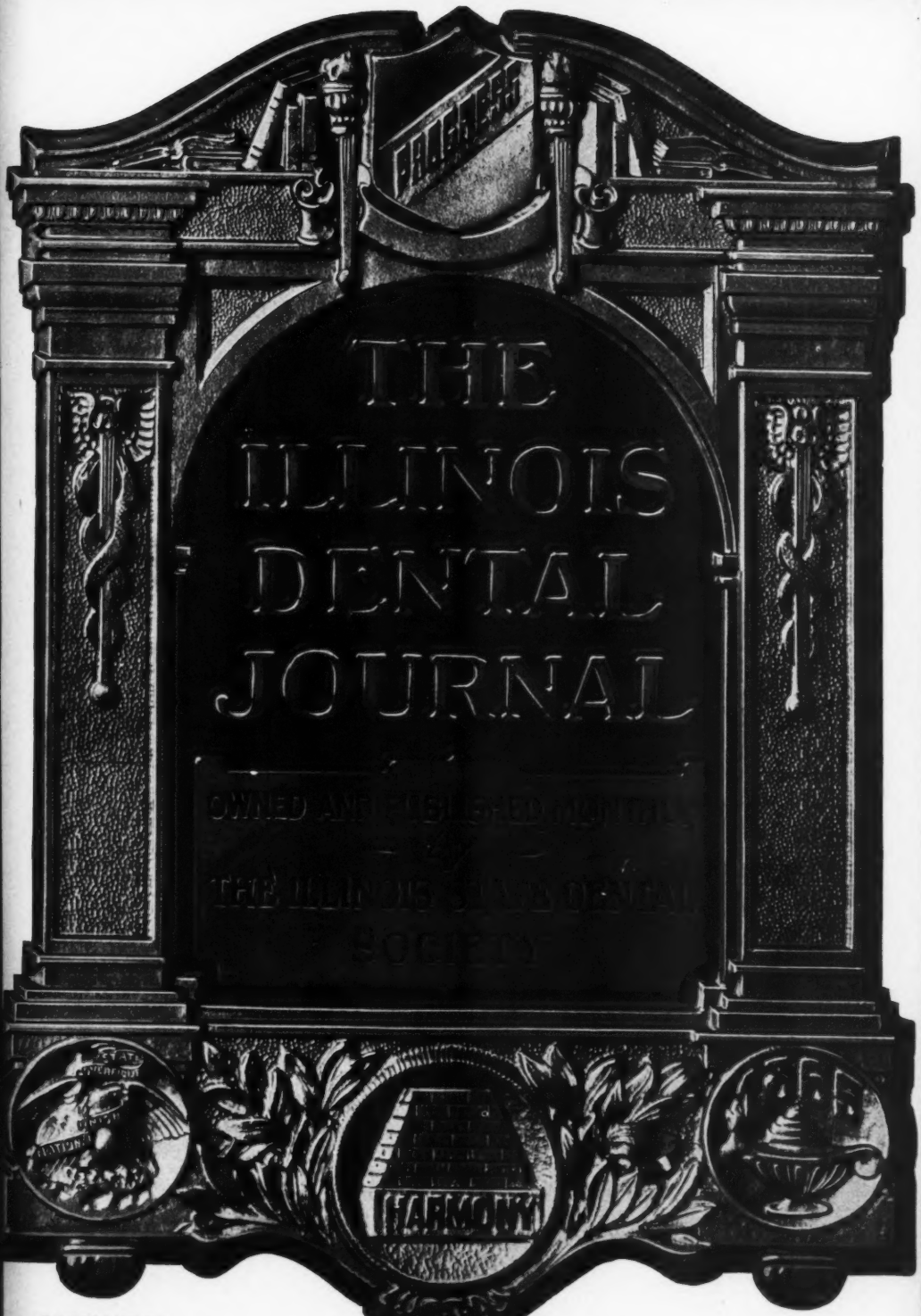

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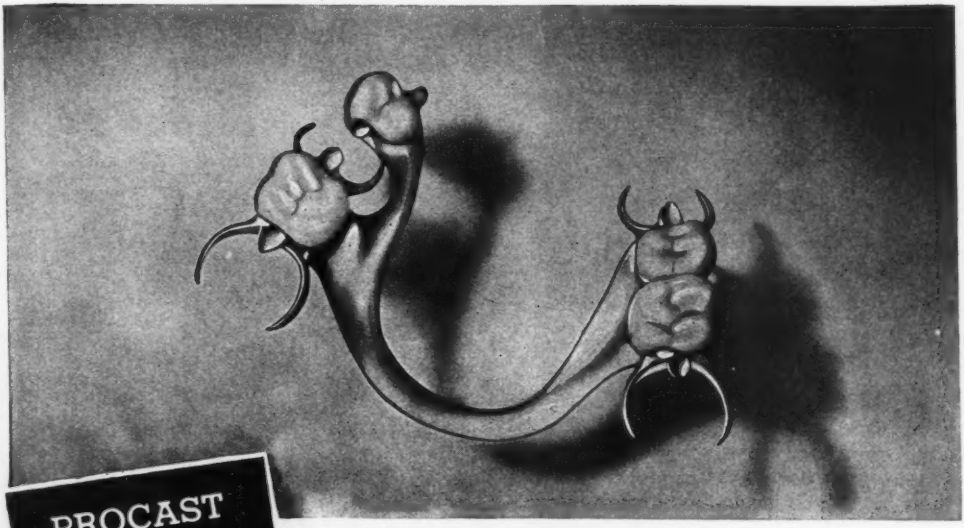

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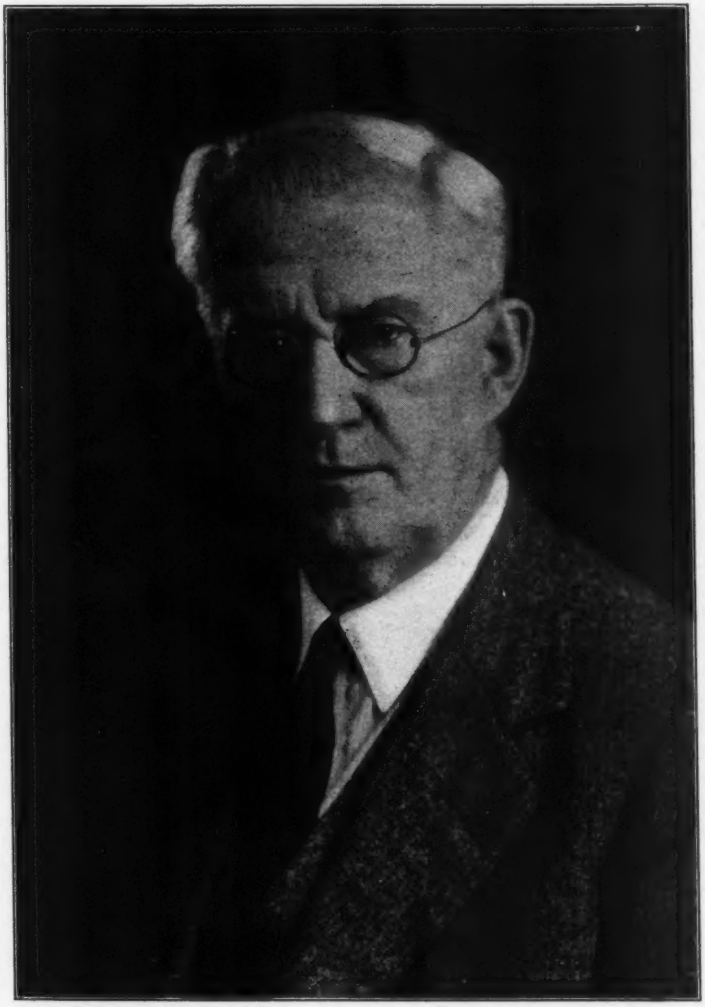

JOHN K. CONROY
1870-1936
Past President, Illinois Dental Society

• EDITORIAL •

JOHN KEANE CONROY
1870—1936

A mighty oak has fallen. The place where once it stood is barren of its friendly nearness. The wind of adversity that tore its roots from out the loving earth reveals the far reaching spread of its strength. The forest will know it no more. He, who may have stood under its protecting greenery, will sense, in no small measure, that that which quietly gave him surcease from the weary load betimes, now lies resting—the judgment of life.

The task of growing, the joy of putting forth bough and leaf, receiving the beneficent rain and shadows of cloud; the placing of ambitious and succulent roots into the warm earth, the reaching towards the infinite sun; ah, life, even in direst extreme, thou art but the fathomless expression of that Force we call God. Mighty oak or groveling man, both with one consuming desire—to find the Light.

So has gone our friend and confrere, Dr. Conroy. Gone? No, just away. His community will give voice to his great heart, his sincere purposes, his love of home and family, and as this writer knows, his great conception and hope of the future wherein credal differences will quietly fade as twilight blends into night.

Though divided by distance, the later years of acquaintance opened up an understanding that took on a true appreciation. To know one, if at all (and sometimes the real value is more than difficult to determine and often purposely hidden), there must be that asideness, if the word dare be used, wherein a subtle something opens the understanding and there is revealed a fine degree of genuineness that seals a friendship.

We speak in a personal way as we place our tribute to him who helped to build his profession to a higher level. His willing acceptance of professional duty in his district is the evidence. His desire to help helpless children, dentally speaking, is another evidence, all without personal preferment or gain.

We are gratified to expose a good life, one that reaches beyond self. Those who make dental history interesting, whose every day living is a splendid escutcheon on our profession; the unselfish giving that through its outward expression is but the soul elevation that resides within.

Such stalwarts, dentists of the receding days, multiplied by years of devotion to early ideals, these be they who become enshrined in fadeless memory; lives not illy spent, though much spent, a heritage for those younger to emulate.

We are glad that Dr. Conroy was honored two years ago by being elected president of the State Society. He served his society well, and by his dignified conduct of the office, added much to its efficiency. Elsewhere will be found a summation of his life and activities. We desire here to touch, in a humble way,

only the fact of his passing and the imprint of his character and devotion to his profession.

We need men such as Dr. John Keane Conroy. In fact, there is a demand for such in all walks of life, they who are not swayed but by righteous appeal. Men who can resist blandishment and spoils; men who build with the idea to add strength. Such men live—there is no death.

THE CHICAGO MEETING

The meeting next month in Chicago is the annual dental feast of this world recognized society. There is a psychologic urge in the word, Chicago. The name being of Indian origin, one's mind harks back to the old pioneer day of Fort Dearborn, and the long trek of the outlanders from Vincennes, Indiana, to this prosperous but Indian infested region, now the great metropolis of the world.

That same urge is apparnet to-day, and whenever our city by the great inland ocean is mentioned, the eye brightens with expectancy. Aside from the fact that this article deals with a dental convention, we, who are cognizant of the physical, geographic, and city-beautiful aspects of Chicago can but wonder how anyone can be so abstruse in their deduction of what must be accepted as the Hub of the Universe. Yes, centers and circumference do move; and, in spite of many derelictions in forms of government and individual defections, this city stands resplendent in what it is now, and what the dream-masters are visioning for the future.

So then, the eyes of the world turn to what was once called the Windy City—why the name, is a mystery unless it applies to the *trade* winds that surely have always kept our marts humming and the factories booming. By the same analysis, dental thought and activity have been focused on this center until what is good must have originated in Chicago: a bold statement and naturally may be antagonized.

Nevertheless, the desire to meet here seems to be the foremost thought when convention times are announcd.

The energy of the people, even on the streets, is a matter of comment by the visitor. So it is not to be wondered at that dentists from near and far build up a world of anticipation when this great meeting is scheduled, and rightly so.

The enthusiasm of the many committees of the Chicago Dental Society is but an earnest of what will happen when the gates are thrown open and the race is on. The commercial exhibit section is the bee-hive of dental industry, for it is here that the dentists close in on the practical side of their work.

Say and do what we will, restorative dentistry is most intrigueing, for from the nascent materials are created by the multiplied efforts of many minds, those appliances which correct deformities and restore lost parts that have much to do with continued good health.

We wish it were humanly possible to so arrange the clinics that all might see.

The bane of table demonstrations is a circumference of heads, near to the clinicians that forbids the ones on the edge to profit. Consequently, the interest is limited and the sample booths claim the largest audiences.

The different scientific sections are never filled to capacity, for, in spite of the best intentions with both lecturer and listener, due to a number of causes, among which may be mentioned tobacco smoke and poor ventilation, coupled with a rather shifting audience, the continuity of the discussion is interfered with and only a comparative few are repaid for staying to the completion of the lecture.

This, of course, is true of all conventions, but the fact should make it imperative that some decided change would be for the best interests. Above all else, aside from personal ambition, ego, profit from numerous things, etc., the paramount thought should be the publicizing of dentistry so that the people at large gain an adequate knowledge of the best in our profession and thereby cooperate for a broadening of health.

No one yet, by and large, has made dentistry or a visit to the dentist a Christmas anticipation, notwithstanding many claims to the contrary. We do know, however, that people are grasping the necessity for dental care and much is due to such great meetings as are held in Chicago.

The same is true in our State meeting which will have its share in the JOURNAL columns as time nears.

The wonder is, and yet, it is no wonder, that all over our Country the enthusiasm for these informative meetings reaches a high mark, and dentists enter into the programs with a vim. Wisely directed, the people should have, and will have, the best ideas of our profession. The constant pounding at an idea, providing it has native merit, will find eventually willing hearers.

Dentistry has a big job to do. There is a wider field than reconstructing broken down masticating apparatus. There is a Social and indigent question. There is a battering down of unethical practice, that has for its lure the convincing idea of cheapness. There is the placing of dentistry under political domination. There is yet a wide breach between the medical and dental professions, so far as combining forces to maintain high standards. And high standards does *not* mean ***high cost***. It does not mean ambulance chasers or narcotic peddlers. It does not mean the tearing down of good teeth for an increased fee or the removal of an appendix for the same reason.

These, and more, are the greater aims of such conventions as will be held in Chicago next month, and in Springfield in May.

The invitation has no strings to it. COME!

AMERICAN DENTAL ASSOCIATION
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SAVE THE TEETH! A TOOTHSOME TOPIC

It is heard the country over, the truth of the assertion is never disputed. Teachers, orators, advertisers, individual dentists, all send out the cry "Save the Teeth!" And then what? The slaughter continues, and pointed chins, hooked noses, wrinkles and inefficient mastication proclaim the truth that is heard, but all too often disregarded.

It is a far cry from the old days when a toothless person hibernated out of sheer shame and embarrassment to the present, when to boldly proclaim the easily seen conditions of a toothless mouth has some earmarks of social distinction. The time was when an afternoon of discussion (not necessarily afternoon, either) of abdominal scars constituted a pleasurable diversion. Now is heard the modernistic, fatuous statements that "My *doctor* (physician) ordered all my teeth out," or, "I had my teeth removed and *everyone* had pus-bags at the ends of *all* the roots!" There is one more of this satanic trilogy that must not be omitted: "The pus from my teeth was draining all through my system! Let us ask, "What system?"

On first thought, it does seem that the Creator blundered outrageously when he brought forth that living sentient thing called man, and made him but a system of canals for the eventual flow of pus. It may be the primordeal thought was to breathe into that dust, made animate, a spiritual and physical resistance that, as the eons raced madly on, would culminate in perfection.

Althougether, it is possible that we have reached that ultimate and are now becoming decadent, the breaking down of our bodies manifesting itself at the apices of our teeth, and conversely, the sooner we rid ourselves of those apexes the longer will our stay be in this land of milk and honey.

Save the teeth! forsooth; but let's do it instead of just talking about it.

Every college of dentistry has its department of therapeutics. If natural teeth are no more necessary, why the department? If this department of applied science for the preservation of tooth health is not leading to the healthy retention of our teeth, replace it with something that has the alluring ring of circumferential metal. This last seems to be the trend.

The time is at hand, and now, when, if we be true to our calling, we will cease this relentless assault on good teeth. We should strive to retain in all honesty, by the help of intelligent and applicable therapy, those teeth whose only fault is a break in their continuity, not allowing them to go into eclipse and become the derision of medical suspicion.

A recent verbosity along this line left no other alternative but to remove the teeth at the time of eruption if one were to escape this St. Vitus dance of apical infection. "The goblins will get you"—even if you *do* watch out.

By no means must this article be interpreted as favoring the retention of all teeth. We plead for a sane approach to this subject and not allow ourselves to be thrown into a hysteria either way. If we are secure in our belief that teeth should be saved *in situ,* then the establishing of scientific data to that effect should

crowd our professional intelligence to help bring about that condition. If the extraneous experiments of medical research reveal that all our boasting of saving teeth is a delusion and that in five, ten or twenty years from the treating of a tooth, a dentist will be found culpable of contributing to the death of the individual for whom the tooth was treated and the roots filled, then, we say, establish the fact without prejudice and let us be done with this back breaking, eye and nerve-straining work.

This writer believes in truth; and if truth leads us from a vicious practice to one of safety and sanity in our work, unmarred by insistent nightmares that we have caused some poor trusting soul to pass beyond the Pearly Gates when he desired to stay on this side, then shall we embrace this new truth and shout "Hallelujah!" to the four corners of the earth.

Like the minister who preached about sin and said he was against it, so we here and now say we are against talking of saving teeth and not striving to save them.

OCCLUSION FROM THE STANDPOINT OF THE FUNDAMENTAL SCIENCES*

By DR. ALLAN G. BRODIE, *Professor of Orthodontia, University of Illinois*

THERE seems to be a vast deal of difference of opinion in the dental profession as to just what is meant by the term occlusion. Thus, the operative man seems to think it means one thing, the prosthetic man another, the periodontist another, and the orthodontists, of course, have another. Probably the greatest imprint has been made by the prosthodontist.

If we think back to Bonwell and his law of the triangle, which seems to have been the first work of scientific merit, his conception that the denture was balanced on three points—two in the condyles and one in the denture—and then as we trace the evolution of that idea to the work of Geisey, Hall, Munson and others that you are familiar with, we come to realize that attacks have been made. First, this work was all done for the purpose of making more satisfactory the stabilization of artificial restorations of the teeth. In the second place, practically all the work has been done on human material, and if there is one poor place to start to work on a fundamental question, it is on the human animal.

Man varies so greatly, he is such a mixture of a number of things, and he presents such widely divergent types that it is rather difficult to sort out from the mass of facts that can be gathered the underlying principles of a question like occlusion.

The anthropologist, the analogist, the biologist have found it necessary if they are to understand man, to go back to earlier forms of some of the lower animals and there seek not the fact but the principles that seem to shine through these facts, and then bring them up to man, lay these principles up against the

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facts that are there found and see whether he answers to what they expect. This has been the mode of attack on a great many other questions, but has not apparently been carried very deeply in our thinking about occlusion.

I have no quarrel with the prosthetic viewpoint of occlusion. I am not criticising it. It has accomplished its purpose. It has led to a vast improvement in the construction of artificial restorations; but the imprint that has been left seems to have been carried over so that it taints our thinking on the biological significance of occlusion. I find that the average dental student thinks of occlusion more or less as the articulation of artificial teeth. He has been taught that he has balancing point in the condyles and that he must have three points of balance in the denture. That is the ideal in prosthetic work. But it is not the ideal in nature. This has helped prosthetic dentistry a great deal; but some of the more recent fields in dentistry, those which have to deal with biological questions, I feel it has a decidedly retarding action.

The pyorrhea man, the orthodontist, those that are dealing with pathology are trying to base the biological system of therapeutics on mechanical principles. And it is a false premise. I am not going to tell you what the true premises are, because I do not know myself; but the effort of this talk will be to talk on the *possible* avenues of approach which are not mechanical, and which we can all study to advantage.

When we get down to occlusion, we have to decide first the type of material that we are going to use and the use to which we are going to put that material. First, we must remember some fundamental concepts of biology, and second, we must study facts that we find, in an effort to discover principles. The embryologist after studying factual knowledge for a long while, comes to realize that throughout the entire unfolding of the embryo there are just a few fundamental principles that nature uses over and over again. Thus we have a formation of layers. These layer folds are few; we have an invagination, and the tissue that is invaginated gradually cuts off that which is grown in, and thus we have these two processes—simple and yet the results gained in those two processes are so innumerable that we have all the tissues in the organs formed from them.

Our dental field is peculiarly rich in habits of this sort. In the first place, teeth are very old, and a good many of our facts that we know about ancient animals have come to us through the survival of only their teeth. I think that we can point out a few principles that have guided this evolution, that have guided the use and principles that have driven this mill, this food procuring mechanism.

The fundamental biological concepts that we must start with: First, one of the most primitive necessities of life is the obtaining of food. Necessity gives rise in nature, as in everything else, to invention, which is another way of saying that structure arises as the result of function and demand.

The longer the same demand is made on the same structures, the more perfect will be the adaptability or the adaptation of that structure to that demand. In other words, if a tooth has been used

for only a few million years tooth form might be almost everything; but this demand is kept up and kept up and kept up, so we find a very highly specialized organ for the procuring and preparation of food.

Teeth originally were for prehension. We no longer need them for prehension; on the other hand, the earliest teeth were not used for prehension of food. They gradually took that on, parallel with modification of the intestinal tract, that was able to take care or ceased to be able to take care of foods as efficient reptiles do by putrefaction and fermentation; but as they came up the scale they assumed other characteristics. They began to be used for mastication, sexual warfare, and eventually in man they began to be used for speech.

Incidentally, when I say mastication, I do not mean the usual narrow concept of the word. Any preparation of food that takes place in the mouth, aside from prehension shall be referred to as mastication.

The type of material we must use in our investigation, to begin with, we must have a masticatory rule. The diet should be pure, but represented in the human diet. The other roles, those of prehension, etc., are from our standpoint unimportant.

One of the purest types of animal denture is that found in the Carnivora, the flesh eater. For our example, we will take the tiger.

His dental formula, incisors $\frac{2}{2}$, cuspids $\frac{1}{1}$, premolars $\frac{3}{2}$, molars $\frac{1}{1}$, your total is 30. Those of you who are not familiar with this method of writing a dental formula, it represents one-half the mouth. Carnivora has greatly reduced the dental formula. He also has the highest specialization for a pure flesh diet of any form, and it is so simple, so highly developed that the principles we can learn stand out very sharply.

First of all, the description of the various types of teeth found in this particular type of mouth: incisors, three above and three beneath, on each side of the median line, meeting edge to edge. At interval, we have the great strong cuspid, canine, the killer, separated from them by a diastema, which receives the lower canine, which is not separated from its respective incisor.

Distal to the upper canine, we have the cheek teeth, consisting of three premolars above and one molar. The premolars are in contact or close to the canine; but in the lower we have the interval that receives the upper canine and separates the canine from the two lower premolars.

Then in the upper we have the third premolar which we would class in dentistry as the first molar, the great sectorial tooth. It occludes or works against the lower molar, and the upper molar is practically functionless. We have four types of teeth, and four functions. First of all the great cuspids passing each other, as they pierce their prey, so they drive right through it, and bearing against each other so the distal surfaces are kept sharp as razors; thus the kill is made. Usually the animal will want to carry his prey, and the premolars come in as a carrying teeth. The way they are adapted, so beautifully, three cusp teeth in the upper, only two of them, and in the lower ,three of them; these

teeth are never in occlusion. They do not meet. They merely are a vice, to enable that animal to carry the load, whatever it happens to be, without driving through it.

The incisors are not functionless, but they are relatively unimportant. They are for the purpose of tearing meat apart from bones and so forth, and getting it down to strips that can be gotten into the mouth. When we come to the molars, however, we have the most interesting tooth from our standpoint. The upper consists of three cusps, the mesial cusp being functionless. The lower two cusps meet each other in that manner.

If we look at this from the mesial or the distal, we find the upper straight sided on the buccal, curved on the lingual and we find the lower curved on the buccal and straight on the lingual, one of them directly above the other.

As they come into function, these tips overlap, and he is ready for his drive down. He has a diamond shaped interval in there; a curved surface against the curved surface, so there is a contact only at that one position, and that progressively travels down these paths. Thus it is kept sharp, and the food is placed in there and literally snipped off with two pairs of scissors working across each other.

Those blades get so sharp that in an adult animal, a museum specimen, you can take a finger nail in that groove and pare it as neatly as you can pare it on any razor. The joint that controls this function, also is extremely interesting. The highest development in control in a joint that we find in the animal kingdom, is represented in this joint. The fossa is almost a closed tube, and in some of the carnivoras, not the tiger, however, this bony surrounding of the condyle is so tight it can not be disarticulated even in a dry skull.

The condyloid process sends the head of the condyle right into that, and the coronoid process swings up high over the zygomatic arch, almost to the top of the skull. The significance of this, we get right away, as soon as we look at a back view of these condyles. They are not arranged at an angle like yours and mine; the axis of one will pass squarely through the axis of the other, transversely on the skull, so only one movement is possible, and that is a straight hinge movement or a bodily sliding of that mandible from one side to the other.

In a carniverous function, a snip, it is necessary to keep that thing in control. This animal is grasping living prey. Things must be under control or he loses either his jaw or his lunch.

If we take the teeth in relation to this, and study the functions, there are many things we can learn. If you look at this, a cross section of the molars, you can see that when they are down and the mouth is shut tight you would have this; in other words, they pass each other completely, as do also the cuspids. There is no occlusal resting except in the incisors.

This animal throws open his jaws, and we will say that he has made his kill and it is time to chew. The cuspids, when the jaws are open and thrown to one side, slide bodily to one side The tip of the cuspid is the only thing that touches, and that becomes the guide to bring those razor blades together. As the jaws are closed, this cuspid slides

against this one, and these tips are brought to rest on each other and the shear is completed. It is absolutely impossible for this animal to fracture one of those teeth, through getting his lower jaw over too far. It can not be done. They are absolutely protected, though delicate edges, and the cuspid thus has two roles; one is prehension in fighting and the other guide for these delicate shears in the back of the mouth. That is about the purest form of denture that we know anything about.

Now I would ask that you make mental note of certain principles. First of all, we find in this animal the highest development of the pure shear principles. If you think of an ordinary pair of shears, you will remember how the blades of those shears must cross each other when the shears are wide open, and how as they come down, held by the screw, the timbre in those enables them to spread out, but all the way down the blade they are touching only at the point where they are cutting. Nature has no timbre in these jaws and has to use a hard material, so she takes advantage of a different thing to accomplish the same purpose; namely, the rubbing of convex surfaces, rubbing together. Thus the shear.

There is only one cutting tooth in this particular animal, and that seems to form the most efficient shear. One can not conceive of two of these teeth in a line, and both of them working efficiently, and we have the greatest power available with the least amount of material, and the least power, that is so far as driving power is concerned.

Another thing that I would ask you to note is the fact that when the teeth are closed, we would say in occlusion, that the upper jaw completely surrounds the lower jaw. There is no such thing as an occlusal rest.

The third thing I would have you to notice is that there is not one denture here, but that there are two dentures; a right denture and a left denture, and we see one is working, the other can not work, being entirely surrounded. As the lower drops, it is shifted bodily to one side and functions on this side, and goes farther away from the upper jaw on that side. We will find that principle cropping up in other types, other classes.

One more thing is the lining up of the teeth, to revise the load. It is not shown very clearly in the Carnivora, for the simple reason the load is so markedly reduced, on acocunt of the small amount of work done in the mouth.

Now if we can arrange our picture in a complete change, and go to an animal whose function is the preparation in the mouth, of a herbiverous diet entirely, we will find an entirely different picture. The Herbivors, living on roots, bark, leaves, stems and the like have no need for a different type of tooth, and the herbiverous tooth is a higher development but using the same principles as the Carnivora.

We might just as well put in here a few of the steps that have led up to the development of this, also a high type tooth, namely the salenidont (?) tooth. Various of these sharp cuspid teeth are found literally cemented together, and as the tooth erupts, it is entirely covered with cementum, crown and all. The enamel is thin, that is compared to ours, and as wear goes on in a horizontal direction across this, we have naturally an uneven wearing of these teeth. If

we were to cut this off we would find ridges, now of the enamel, and in the center of those ridges dentine, and the base filled with cementum. Some of these show very complicated patterns. I hope to be able to show you regardless of the complication of the pattern, the principle is the same in all types.

We find in the vegetable eaters they no longer have to kill prey; they are mainly peaceful animals; they have no occasion to fight, and we find the suppression of the cuspids, the canines. It is true some of them develop horns, but this is not a universal role either. The canine is a disappearing tooth in the Herbivors. The incisors may or may not be suppressed. Do you remember the old trick question about how many upper front teeth has a cow? The cow has no upper front teeth; the horse, however, has upper front teeth, and the incisors of the horse are modified exactly the same as these molars are; a long curved tooth with a big bay; that is this enamel has formed a deep bay, surrounding dentine we would call it a sulcus, and through this fact you are able to tell a gift horse how old he is when you look him in the mouth.

We have then the Herbivors with the same principle of a diastema. It is true the rumor has gone out this was put in for the benefit of man to slip a bit into; you find this principle in all lower animals, and not only the horse.

I will not bother you with the formula for this animal, but a description of the different classes of teeth is necessary for an understanding of our problem. The incisors I described here are column-like, more or less square in cross section and there are usually three above and three below, if the upper are present, or three below with none above. The canines have been suppressed; in some forms we do find a vestigial tooth remains, and in some they develop a deciduous tooth, although they do not develop permanent canines. Premolars show modification; they become more like molars. We begin to have a true chewing surface now, and it is rather difficult unless you know the formula, to differentiate between a molar and a premolar.

There is no sense in telling you how a horse chews, because you all know. You know also about the cow. The articular control of these surfaces is interesting. The condyle head is usually ball shaped, but it has an enormous fossa to work in. There does not seem to be any definite control, any relation between the head of the condyle and the occlusion of that particular animal.

The line-up of the teeth is interesting. In the lower jaw, if we were to take for instance the horse or cow, we have this great long narrow jaw, with incisors up in here and a long wall of teeth down in here, premolars and molars, and by the time we have looked at our picture, these have been worn off so that they present various intricate patterns or enamel ridges, the contact points. They are not contact points; they are contact surfaces—have been largely obliterated.

The upper jaw will usually present a curve of more or less intensity, and here we have the same type of tooth in the upper and in the lower jaw. There are two or three significant facts here. First of all, the line-up of the teeth; we have everything from two straight lines above and below, to two curved lines in the Herbivors. Neither have

special significance. Neither modify the principles.

If we were to look at a lateral view of these teeth, we would find in the lower jaw a typical Chinese wall of teeth, divided by perfectly square contact points, uttering contact all the way from the interproximal marginal ridges we would call it, right through, and those on the ends lean toward the middle. Only those directly in the middle stand erect. The upper jaw, notice also if you please the Curve of Spee is reversed. This is a universal rule, yet it does not modify the principle at all. Here again the upper teeth drop down and completely obscure the lower teeth when the animal is at rest. If we look at it anterior-posteriorly, we see it completely locked in, the mandible up inside of the maxilla or the upper jaw.

What does this mean? It means that in order for this animal to use either one of these sets of teeth, he must drop that mandible, throw it completely to one side, and form a contact back here, on the most posterior end of that set of teeth, and then gradually swipe that mandible across those occlusal surfaces until he gets back to a centric position. If you can conceive of innumerable little enamel ridges sticking up here and being met in a transverse rotary position by other ridges, you have the shear principles again. You also have the shear principle of the entire jaw, because as this starts back the contact will be formed, and the farther over it came the more it would include, and finally this would be the only part functioning before it dropped off and settled up into occlusion.

We find that is a universal rule. The entire teeth on the one side of the jaw are *never* in complete function. It is inefficient. Nature functions back here and carries that load forward as she goes, but there is only a diamond shaped interval actually functioning at one time. It cuts down on the need for power, increases efficiency and promotes the health of the mouth—in the animals at least.

One of the principles that interests us greatly is this lining up of the teeth; that is the pronounced lean of the most anterior and posterior teeth toward the center of the load. You can see that if this huge mandible were brought over here and struck a blow in this direction first, and all those teeth in this diastema received the blow, we find this load strikes here first and gradually becomes erect over the middle of the arch and tapers off, driving a backward blow; so we have one part receiving one kind of blow and another part a back lash, which leads to a state of equilibrium at all times.

The contact points, as I said they are surfaces, here again in some of the types we find a very high specialization. Sometimes these teeth are wavy, and they are actually locked in with their neighbors, through enamel rods, so it is impossible to drive an instrument through them. Just think what a helpful thing that is, with a fibrous food!

Now there is one more type that shows a very high specialization in some cases, and yet belongs to all classes; that is the rodent. They are the most widely distributed type in the entire animal kingdom, and they are found even in those places where evolution has been forced, such as Australia, Madagascar, etc., showing very decidedly that these forms have arisen not entirely as result

of mutations but they have been forced by function to adapt themselves.

The rodent may be a vegetable eater, a carrion eater, he may be carniverous. We find the same specialization of his incisors, regardless of what his diet is. Teeth curved, of persistent growth, growing all through the life of the individual, and being alternately on the lingual and then the labial, to keep the edges sharp. He usually has to go through wood or something of the sort to get his diet.

In the back we may have any type of tooth, any modification we have mentioned so far, including the Omnivar, which we have not talked about. When he is in function at one point, he is out of function at another. When the food is once in the mouth and he wants to prepare it, he comes back to a function here and this incisor drops back here. There are two modifications here that we have not struck before; one is the tooth of persistent growth, which grows throughout life and whose pulp is way back under the molar series.

In the Herbivora, I forgot to say, we have another modification; we have a tooth which is not a tooth of persistent growth, but of persistent eruption. Wear is incessant. Their pulps remain open throughout life. The tooth of persistent growth is entirely different. It actually grows all through life, and the incisor of the rodent is an example of it; the tusk of the elephant is another example. In the rodent the thing we are most interested in is the nature of condyle control we have over a function of this sort. If we look at the posterior view of the brain case, we find sort of pasted on the outside the zygomatic arch. In most cases it does not present any modifications; it is just a shelf sticking out there; it runs forward, and on that shelf works this condyle.

In the white rat which does not have an excessive range, the range of this condyle forward and back is over a quarter of an inch. Perfectly level, perfectly plain, and it does not seem to have any effect; it could not possibly have a great deal of control over the function of these teeth, so far as balancing between teeth and condyle is concerned. It is a carrier, a home to go to when teeth get tired, and that is all.

But here, again, we have the shear, and we have two functions; a vertical, and we may have a herbivorous horizontal function, working on the same joint, which is something we have not found in the other two pure types we have studied.

And now we come to the animal in which you and I are mostly interested; the human. The dental formula here is not true to man either; incisors, $\frac{2}{2}$, cuspids $\frac{1}{1}$, premolars $\frac{2}{2}$, molars $\frac{3}{3}$. We have an entirely different shaped denture, however. We find for one thing a continuous arch; and even in the higher anthropoids, we find some sort of a diastema. In the gorilla, the orang, there is a diastema at the cuspid region, which merely enables the locking of these teeth.

What does the human have that these animals do not have? He has speech for one thing; he has a larger brain case for another thing; muscles of expression in the face for another thing. All have left their mark on the human denture, although they have not markedly changed the form of the teeth. Pre-

hension has disappeared, and mastication and speech have become the main function. Diet is omniverous.

The tooth forms you know as well as I do, and their purposes, the blade-like incisors, the cuspids for piercing, although they have lost their prehensive quality, the two cusp premolars, four surface and the vast expanse of molar surface now for a more or less herbivorous modification.

The growth of the brain case, creeping forward over the face, speech, and the use of the muscles of expression, pulling back on the denture, together with a lack of the need for prehension, have all had a "finger in the pie," so far as the shortening of the arch is concerned. We have balancing features in the human denture that are apparently not found in the same form in the lower animals. As far as masticating function is concerned, there is not a great deal of modification. We still have guides for the control of the molar inclined plane or the shears, and before we go further, I would like to draw your attention to these inclined planes, the modification that makes shears of them. We think of a molar as being a cube, surmounted by four pyramids or cusps; but these pyramids or cusps do not follow the straight up in this manner, from the side of the tooth. They are rotated, forty-five degrees, so that an inclined plane goes off from the middle of the surfaces.

Looking down at a tooth, we have this sort of condition. Here is a sharp blade, here is a blade, here is a blade and here is a blade. What is the purpose of that? Supposing we turn this around and we put our cusps in place this way, with our sharp blade right here and one just back of it. When you put in an interdigital cusp, and where we have no lateral lock whatsoever, those teeth can slide directly through the grooves, both anteriorly and posteriorly. There is no measuring or cutting edge to be found anywhere in the entire denture. When you rotate them, the cusp in working, the teeth are all working in succession, whether it happens to be buccally or lingually, and it is the question of shears again, not surfaces. It is the crease of those cusps that do the work. The articulator control is another thing that has received a great deal of attention from the prosthedontist, and rightly so. But the articulator control is relatively unimportant so far as the function of the natural teeth is concerned. Perhaps I should have whispered that.

Some recent work done in Sweden by Hildebrand, which you can find in the Scandinavian archives of physiology, brings this fact out very clearly, that the so-called dental arch is determined—not by the path of the condyle but by the slant of the lingual surfaces of the incisors. This of course has been done on human material so far, and human material so far has been the only contradiction in the entire picture. There is an additional evidence that you can draw out of your own background, however.

Take a person, extract his teeth, let him go for a number of years, examine the movement of that condyle, and see if you have the same. A modification has gone on and a modification seems to take place and entirely or almost entirely in the floor of the fossa rather than the head of the condyle, which is very hard to modify.

In the human, we find another struc-

ture, the articular eminence, which has a significance, but only in opening. You remember that in both your Carnivora and your Herbivora, in order to put one side in function, it was necessary to drop the mandible and carry it bodily. It is as necessary in the human. When one side comes into function, the other side goes out of function. This also should be whispered.

We start at the other end of the lateral in the human. We use the lingual surfaces of our cuspids as the guides for the molar inclined planes. The Herbivora is working on a table. He can swing over, sit down and swing back; he does not hurt anything; he does not whack anything out. We would, and so would the Carnivora; so the wave of occlusion starts in front and sweeps backward on the human.

We hear a great deal about balancing this occlusion. One man in New York even advises the orthodontists to mount their finished cases on anatomical articulators. This is sort of putting a man-made measuring stick on biology. We have seen all the way through that nature uses this principle of progressive mastication. The whole denture is not in operation at one time. The load is passed forward or backward, and we have a small part of it working efficiently at that particular instant and passing the load on to another part. You can find that, and I hope you look for it, but do not look for it in the human because the human is not a pure type.

We find also the principle of the shear. The herbivorous diet requires more than one set of shears. It requires as nearly as possible the sliding surface, innumerable sets of shears, which we have in the cusps. These are most efficiently arranged in a vertical plane. You remember your Carnivora was a chopper; your Herbivora was horizontal, I should say. The Carnivorous diet requires a few planes, shears, arranged in a vertical direction. A man can not have a pure denture like that. There is a modification between the two, so instead of having a flat, horizontal or a perfectly vertical function, men have a change between the two. You will find that common in your Omnivora.

The contact points in man are just as important in man as they are in the herbivorous type, but now they become ball shaped instead of flat surfaces. We are going back to them in just a moment.

There is no division of the denture, as we have mentioned before. The teeth are lined up mesio-distally and bucco-lingually to best resist the force that is passing over them in this way. That is why we have different inclinations of different teeth.

Now why do we have the type of the joint that we do have? Why do we have an eminence, an articulator eminence? Solely for the reason that man in occlusion is locked. He can not slide sidewise, as do the Herbivora if he could rest, or the Carnivora could if he could rest. Man DOES rest, but he can not unlock that. He wants to bring one side of his denture into place, so he brings the opposite condyle out, and as he brings it out it is not brought out on a plane; it is dropped downward and forward which unlocks it. He carries it to the functioning side, brings his incisors into contact, and gradually slides back to what we call an eccentric occlusion. In doing so he brings a rapid succession of blades into contact as he goes.

Now you can visualize the same as in the Herbivora, when that mandible is closing the maxillary teeth there is a different line of force at every point of impact. We find the peculiar surface in the human dental arch, the Curve of Spee we have already seen the principle of; but there are two other curves of normal arch outline, and the peculiar curve you see. The occlusal surface of the third molar points outward, downward and backward. If you will think of this wave that travels through, you will see the reason for this. In man it slides over and gradually comes back and the teeth were in contact at all times, and you would not have this arrangement.

That appoints a balance which we have not taken up under the other types, but which are very important in man. We have first of all the weight of occlusion. We have seen in the Herbivora how this starts in the back, travels forward and exerts a backward pressure in the front of the arch. Man does not have that. Man gets his resistance from the front of the mouth, and in the front of the mouth are muscles of expression man has—the only animal that does have them.

These teeth are lined up so they are almost able to take care of the load along their axes, but not quite. There is a little force left over in the molar region, which is a forward force; in other words, a little leakage there that is not quite taken care of in the aligning of the teeth. It is derived no doubt from the structure of these teeth, if you will think of a lower molar with the distally slanting root and an upper molar with its slightly distally slanting root, you will see a blow struck along the long axis of the tooth still leaves a slight resultant force in this direction; so we have a drive along the buccal segments, merging at the cuspid in this direction, coming from the molars.

We have here a broad sheet of teeth, the incisors, and so long as contacts are maintained there, and the labial must be normal, everything here will be kept in balance. You have on the inside the tongue; on the outside the buccal musculature. You will visualize what is going to happen to this balance that we have talked about, this nice adjustment that is such a picture in all the other forms. The contact points, of course, are the important things and the arch form, in this case, with the crowding back here and the laxness here, have enabled this arch to swing out in a more rounded form than is found in most of the other forms.

I think that it should be apparent that we have more than one denture. I think that we should be able to see that we have a left denture and a right denture, and I think we should be able to see why the nature of the function and so forth. Sometimes with age man will show some very striking similarities that look almost like reversion to early types, and if any of you are ever fortunate enough to be able to examine an extensive collection of Eskimo skulls, where the function is entirely carnivorous, you will be struck by some of the things that we have spoken of tonight. You will find the cheek teeth in the upper jaw almost the full height of their crowns, but the lingual cusps will be entirely gone, and the lingual surfaces will slant from the tip of the buccal cusp to the tip of the lingual. Your lower arch has a tendency to assume a position entirely in-

side of the upper jaw. Most of you, perhaps, have not seen this, but I know that most of you have seen an aged tobacco chewer where the function is entirely different, and what have you found? Any cusps? No. Nice even plane with your little fine frill of enamel surrounding the entire thing; contact points are no longer points but surfaces rubbing together, and we have this grinding, sliding back and forth, absolutely incapable of chewing flesh.

Now, Gentlemen, I have not given you very much so far as facts are concerned. I merely tried to point out some of the leads that we maintain, and comparative anatomy is only one field. And I would like to leave with you a plea that we discontinue our thinking about occlusion along strictly mechanical lines. These are all mechanical principles that we talked about, but they are mechanical principles grafted on biology. They are the mechanical principles that nature uses, and if we are going to solve some of the biological questions, we can not start from a mechanical precept or premise. We have to go back and lay our roots in what we find in biology.

DISCUSSION OF PAPER OF DR. ALLAN G. BRODIE

Dr. Lloyd S. Lourie: I would not attempt in any way to supplement or elaborate upon this interesting talk. I do wish, however, to emphasize one of the first statements that the essayist made, and of which I would like to hear the reaction of some of you who are not engaged in the specialty orthodontia. I think the orthodontists would probably stick together on the statement that was made that the principles that proved efficient in the making of artificial dentures should not be applied to natural dentures. I think a great deal of harm is being done, attempting to get three point contacts in artificial dentures.

I would like to hear some discussion from men who are not engaged in the practice of orthodontia.

I also would like to thank Dr. Brodie for his interesting talk.

Dr. G. Walter Dittmar: I do not know that I can add a word to this very excellent presentation, other than say I was very interested and enjoyed it very much.

We certainly appreciate that the orthodontists have been doing some real fundamental work. I would certainly agree with the remark Dr. Lourie made just a moment ago when he said he thought some of the prosthodontists, and also operative men, crown and bridge men have tried to construct the whole denture along certain mechanical lines in certain operative purposes. I personally think they are entirely off their track.

We here tonight heard Dr. Brodie say the mechanism is really in two halves, a good deal like the two arms, one working and the other doing nothing except to balance; while of course they do work in unison, it does not follow that they have to do so.

Dr. Frederick B. Noyes: I would only want to ask you to think of some of the principles that have been pointed out, perhaps to first emphasize the relation of the load to the axis of the tooth and consequently to the character of the supporting structures.

Again, I would like to emphasize, as Dr. Dittmar did, the double nature of the denture. Operative men come to recognize the side that is used the most, and orthodontists come to look for the

side that is used the most, particularly during the periods of retention. Invariably, if one side is used and the other is not, the side that makes trouble is the unused side, provided the previous adjustments have been approximately normal.

The conception of the human denture, purely from the mechanical standpoint is one of the strangest things in the world to me. I remember sitting next to Dr. Clapp one night at dinner and asking him how he thought the minute grinding of points of wear on the denture could have any permanent biological action, and he said only because that man visualizes this denture purely as a mechanism, not as a biological entity.

We can not lose sight of the fact that nature and biology have their mechanical phases, and that life adapts to mechanical forces; but we are apt to forget the biological response to the force, and think only of the machine.

Dr. W. Ira Williams: I would like to ask one question of Dr. Brodie. I think we could talk for weeks on this question of occlusion in the human mouth; but to get back to his part of the discussion here tonight—I would like to ask if he has any way of accounting for the perfect mechanism or machine of these two first types that he speaks of, and of the wholly imperfect arrangement of the animal when it gets up to our stage of civilization.

I know I do not make myself clear, but in the human being, at least in the kind that I have been practicing dentistry and examining mouths, I do not think I have found but about two or three what you might call normal or perfect occlusion; that is, perfect mouth, where things have developed to that state where it would in any way nearly approach the perfect type of which you spoke first.

Why is it we have developed to this stage of intelligence, and yet we have nothing like the perfect masticating machinery that the lower animals have?

Dr. Allan G. Brodie (Closing Discussion): Dr. Williams, it is probably because we are so-called intelligent. However, there is another reason also. The forms I spoke of first are very primitive, very high specialization, for a pure function over a very long period of time. If we take the earliest forms, the fish and the reptile, we have a sort of hit or miss arrangement. Gradually out of the chaos comes order. One of the first forms is the Carnivora. It is true I picked very, very pure types; but among the Omnivoras, you can find in the species a modification. Your dog is not a true Carnivora. He is beginning to show modification. Your tiger and your ruminants are very high specialization, and their function has remained pure for a long while.

Man is not a pure type, and is comparatively recent. He still is in a stage of flux, and he is changing his environment so fast all the time; the mere cooking of food, for one thing, throws him out of line. You will find in the earliest man some traces of malocclusion; in other words, he has never allowed himself to become set, and perhaps the human denture, as seen today, if we were to freeze our environment, if we were to keep our environment just as it is for millions of years, perhaps we would evolve an entirely different denture than we have now.

We have not stopped. Some of these

animals have gone to a certain stage and stopped. You can not conceive of anything more perfect than a Carnivora, this particular Carnivora; but you can find—I mentioned in one part of my talk that rodents were scattered very widely. We can account for three successive stages of evolution in most parts of the world except Australia and Madagascar. These land masses were cut off very early so they never had the benefit of the admixture. We have such animals as the Kangaroo in Australia, which is not found anywhere else in the world, because he struck off on a different branch; but you will the rodent there.

The rodent did not come of a common stock. He developed on his environment, and because his environment is the same, he developed the same. Does that make it any clearer?

Dr. Williams: Still, I am like Dr. Noyes; this human jaw is the biggest mystery that I ever came in contact with.

Dr. Brodie: It is as big a mystery to me as it is to you.

Dr. Noyes: Isn't there a factor there, Dr. Williams, in the fact that the efficiency of the denture is not the determining factor in civilized man's efficiency? If it were, then, only those individuals who had efficient dentures could persist, you would have aggressively more and more efficient dentures. By the same sign, I have had occasion to say to students a good many times, that in the average of Chicago life, the efficiency of a denture does not count so much, but when you get a group of men out on an Arctic expedition, who lives through? The man with the denture. The rest of them die because their denture is not efficient enough to get nourishment from the shoe leather or materials they have at hand. If you had that kind of environment for man you would have a progressively more and more efficient denture development.

With the kind of environment you have for man, you have the increase in the trouble with these dentures; therefore the dentist. And in proportion as his knowledge of new tissue increases, the load on his denture decreases, because the man with the imperfect denture can still get adequate nourishment for his full physical function in civilized life; but throw him into a primitive condition where he had to wrest that from most primitive sources of food, and he would not last.

Dr. Williams: Do you think he would develop back—if he were thrown into that environment today, do you think he would survive or pass out?

Dr. Noyes: He would survive. That is, his numbers would be reduced very markedly, and progress toward a purer and purer type. By the same sign in your purer races, you have the same tendencies of purer types of dentures which are illustrated in the Eskimos. You have certain vegetable diets in primitive races, a tendency to develop a type which is characteristic of that pure environment.

Dr. Williams: I think this has been a very, very interesting and enlightening talk. I do not think Dr. Brodie had any thought of solving the question of the three point contact or anything of that kind, and I am glad he did not even get on that subject. It is much more interesting, at least to me, and I would make a motion that we give a rising

vote of thanks to Dr. Brodie for coming here and giving us this interesting talk.

A rising vote of thanks was given Dr. Brodie for his interesting and intelligent talk.

DENTAL HEALTH EDUCATION DEPARTMENT

By Committee on Mouth Hygiene and Public Instruction, Illinois State Dental Society and Division Dental Health Education, Illinois State Department Public Health, Charles F. Deatherage, Chief, Division of Dental Health Education, Springfield, Editor

TEETH AND THEIR PRESERVATION*

By CHAS. F. DEATHERAGE, D.D.S., *Chief, Division of Dental Health Education, Illinois State Department of Public Health*

IT IS the ambition of parents to aid their children in securing an education, in developing a Christian character and in making a wide circle of friends. If, in the span of life, you are fortunate enough to help your children in accomplishing these things satisfactorily and forget the most important—that of HEALTH—then you have fallen far below your desired objectives.

Our first and by far the most important objective in regard to our children should be to aid them in achieving good health, because, without that, all the friends and all the education will never enable them to enjoy the fullness of life or make them the citizens they might have been.

There are many phases of health, but the one to be discussed is that of MOUTH HEALTH or MOUTH HYGIENE, which is nothing more than simple rules for the preservation of the mouth, the teeth and the gums.

*Radio talk.

Nature has been very kind to us in giving us 52 teeth during our life, 20 in the first set known as the deciduous, baby or milk teeth, and 32 in the second set, which are known as the permanent teeth.

The deciduous or baby teeth begin to form many months before the child is born. Some authorities believe that as early as the fifth fœtal week they can distinguish the teeth beginning to form. In fact, they believe these teeth can be detected before the other organs of the body begin to form. About the seventeenth fœtal week these first teeth begin to calcify or harden. The crowns of all the deciduous or baby teeth are fully formed at birth, with the possible exception of the second baby molar, which is about three-quarters formed.

Authorities say there is evidence of the first permanent or six-year molar at birth. Therefore if the child is to have strong, healthy baby teeth, the mother should have the proper prenatal care,

because all teeth are made up of MINERAL SALTS.

The three most important are CALCIUM or LIME, PHOSPHORUS and IRON. Calcium is the predominant constituent of both the enamel and dentine. The mother during this period may receive sufficient amounts of mineral salts by eating foods containing these elements. Also during this period the mother should be under the care of her family physician and dentist.

The first deciduous or baby tooth is the CENTRAL INCISOR, which appears in the front part of the mouth about six months after birth. From this time, then, until the child reaches the age of two and one-half to three years all the baby teeth have erupted. They are twenty in number—ten in the lower jaw and ten in the upper jaw. Between the ages of three and six years no more teeth will erupt, but during this time the permanent teeth are developing beneath the deciduous or baby teeth, and each baby tooth should be preserved until the proper time for it to be "shed," as they are of vital importance to the proper development of the jaws and the positions which the permanent teeth will occupy.

When the child reaches the age of six, the school age, there is something taking place that is of the utmost importance to the future development of the child's mouth. That is the eruption or coming through the gums of the first permanent or six-year molars.

There are four of these molars—two in the upper jaw and two in the lower jaw. They come in directly back of the baby set of teeth and DO NOT REPLACE ANY BABY TEETH. The development and preservation of these four six-year molars is of very great importance for several reasons:

First: They are the first of the permanent teeth to take their position in the child's mouth.

Second: The position of the six-year molars will determine the position of all succeeding permanent teeth and therefore are an important factor in regulating the length and width of the jaws.

Third: The length of the six-year molar crowns determines the separation of the jaws.

It can be said, then, that these four six-year molars are the "CORNER POSTS" or "FOUNDATION" for the permanent teeth and jaws and should be preserved for a lifetime.

The next permanent tooth erupts or comes through the gums about the age of seven in the front part of the mouth. From this time until the child reaches the age of 14 to 16 all the permanent teeth are rapidly replacing baby teeth.

This is NATURE'S plan, but there are diseases of the teeth and gums that may interfere with this plan. One of the most common and prevalent is that of DENTAL CARIES or DECAY. "We cannot consider a child in perfect health unless the mouth is in a healthy condition," says Dr. Frank J. Jirka, Director of Health, State of Illinois.

With these facts in mind, then, how are we going to help nature and how can we prevent diseases from attacking our teeth? There is no one positive cure, but a few health practices will help to prevent these diseases.

The first is that of HOME CARE. By this we mean that part of the care of the mouth and teeth which the individual must practice at home. The teeth should be brushed after each meal, but,

as that is sometimes impossible, a good plan would be to brush them every night before going to bed and every morning before starting the day's work.

When we speak of brushing, we do not mean a listless and hapless process, but a vigorous brushing on all surfaces of the teeth, so that all the food particles may be removed from between the teeth. Use a brush small enough to clean the back teeth. Do not brush only the teeth, but brush the gums as well.

Tooth paste, tooth powder, baking soda, salt water or just plain water may be used for cleansing. The proper brushing technique is of very great importance and your dentist should be your guide, since the brushing should be varied to individual needs. Much time is spent in our daily grooming, but how much of that time is spent on our teeth? One may safely say a few seconds.

A child should be taught the use of the tooth brush at the early age of two and one-half to three years, or, in other words, as soon as the baby teeth are in place.

Children at this age have a tendency to copy or imitate. Therefore, if brushing the teeth is a habit of the mother and father, it will most certainly become a habit of the child.

A second suggestive method for preventing dental disease is to supply the body with proper foods containing the tooth-building materials—CALCIUM, PHOSPHORUS and IRON. The following foods will insure sufficient mineral salts in the diet.

1. A pint of milk per day for adults and at least a quart for children.
2. Five or six eggs per week.
3. Liberal amounts of fruits, such as oranges, grapefruit, peaches, apples, apricots, pears, tomatoes or tomato juice, etc.
4. Green, leafy vegetables, such as cabbage, green beans, spinach, asparagus, cauliflower, beet tops, lettuce, lentils dry, carrots, parsley, kale, etc.
5. Some raw food at least once a day. This will require chewing, which will exercise and develop the jaws and facial muscles.
6. Whole grain cereal products.
7. Meat, fish and fowl several times per week.

All vegetables should be cooked in as little water as possible or, better, steamed to retain their minerals and cooked no longer than necessary to be palatable in order that they will retain their vitamin values.

The final suggestion for preventing dental diseases is to "SEE YOUR DENTIST REGULARLY." Nothing is more important than proper dental care.

The child should be taken to the dentist at the early age of two and one-half to three years when all the baby teeth are in place. This would give the dentist an opportunity to examine these teeth for defects or flaws. Many times when the teeth erupt or come through the gums there is a defective spot in the enamel or outer covering of the tooth.

If any of these spots are found, the defective part of the enamel should be removed and a filling inserted.

DO NOT NEGLECT THESE SMALL DEFECTS, because food may lodge in them. They also afford a good habitat for the bacteria in the mouth to grow and multiply, thus causing the tooth to decay. Dental caries or decay that is allowed to progress will affect all structures of the tooth and eventually in-

vade and destroy the pulp or nerve, resulting in an abscess.

When this condition exists, other parts of the body may become infected.

Visits to the dentist should be at regular intervals, every 4, 6 or 12 months, dpending on the individual. This will allow the dentist to observe the shedding of the baby teeth and the eruption of the permanent teeth. He will be able to teach the child proper brushing technique and also to advise in regard to the food program. He can assist the parents in eliminating any BAD HABITS that might cause the jaws to be malformed.

Many cases of malformation of the jaws and teeth in adults might have been prevented had only that individual received proper dental attention at an early age. REMEMBER, a habit, good or bad, that is formed in early childhood will be a lasting one; therefore let your children be trained in proper health habits.

By observing these simple principles we should certainly find several things that will be helpful factors in developing better teeth for our children.

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It is with pleasure that the membership can be informed that the Illinois State Dental Society closed the year 1936 with 3,543 members, an increase of 212 over the 1935 membership and a new high for our Society.

The desire so evidenced by this large portion of the profession to support their dental organizations, both morally and financially, speaks well. Also, not only inspiring those who direct the efforts of the organization but mainly indicating interest in what is being done to direct dentistry into better paths and to hold its rightful position.

A well directed effort is being made this year by the Membership Committee of the State Society to check the entire State and invite into membership all eligible non-members. Each member is urged to assist the committee, through his local membership committee, thereby making the task less arduous for those in charge and more fruitful.

The *1937 dues* are now payable, and notices to this effect have been received by all members. Please send your remittance now to your *Local Secretary,* thereby relieving him of extra effort and at the same time completing an obligation of first importance to your professional activity.

Let the goal for *1937* be *4,000 members.*

AMERICAN DENTAL ASSOCIATION

July 12-13-14-15-16, 1937

Atlantic City

STUDY CLUB ACTIVITIES

WE ARE very happy at this time to announce the Study Club meetings that have been held since our last report:

December 3, Champaign-Danville district, Urbana. Dr. Stanley D. Tylman was the instructor. Subject for the afternoon and evening: Crown and Bridgework. In the afternoon Dr. Tylman gave a table clinic with models showing different restorations and the technic used in each. He dwelt at length on the different abutments used in the different restorations, their indications and contra-indications. He stressed the different types of pontics with special emphasis on their construction for cleanliness.

During the evening session he showed a goodly number of slides giving each step of the technic for the different restorations in detail. Dr. Tylman discussed his subject so thoroughly that the members of the group felt as if they had taken a full post-graduate course in crown and bridgework in one afternoon and evening.

December 3, Madison County district, Alton. Dr. R. H. Young was the instructor. Afternoon session, subject: Dentistry in Relation to Diseases of the Hæmopoietic System. We are very sorry that we do not have any further report on this lecture. No doubt this was a very interesting subject, and an outline of it would have been of great value to members of other groups.

Evening session, subject: Dentistry—A Medical Specialty. After Dr. Young discussed this subject a general discussion followed. He cited many cases where the relation between the physician and dentist proved to be of great importance, not only from the diagnostic but also from the prognostic viewpoint.

December 10, Central Illinois district, Pana. Dr. Paul C. Salisbury was the instructor. Subject for the afternoon and evening sessions: Minor Oral Surgery and Local Anesthesia. A brief outline of these lectures is as follows: (1) Technic of the extraction of teeth. a. Armamentarium — extensive equipment unnecessary. b. Simple—chair positions, forcep positions, application of force and resulting movements. C. Difficult—methods of bone removal, sectioning teeth, use of elevators, etc. d. Impactions. (1) Post-operative treatment—discussion of post-operative conditions, local and general treatments. (2) Alveolar resection. (3) Vincents infection. a. Other diseases with mouth symptoms resembling Vincents infection. b. Etiology. c. Treatment. (4) Cysts. a. Classification. b. Etiology. c. Methods of treatment. (5) Technic of injection in local anesthesia. a. Chair positions, operator's position, and discussion of methods of making the conduction injections used in dentistry.

December 10, Eastern Illinois district, Mattoon. Dr. Eli Olech was the instructor. Subject for the afternoon, The Removal of Impacted Teeth. The instructor discussed the indications and contra-indications for the removal of impacted teeth, and the technic of the operation. Following this discussion, two impacted lower third molars were removed under local anesthesia. He showed the removal of the process of bone in these cases by means of the chisel and mallet, and gave his reasons for preferring this method over other meth-

ods that are used by other exodontists.

The evening session consisted of a demonstration, by models, of the technic of surgically preparing jaws for the reception of artificial dentures. Following this, there was a lantern slide demonstration, then a lecture which covered the following subjects: 1. Impacted third molars. 2. Various types of cysts found about the jaws. 3. Root resections. 4. Broken needles. 5. Salivary stones. 6. Tumors. 7. Osteomyelitis. 8. Necrosis. This was followed by a discussion, during which many questions were asked and answers given.

December 10, G. V. Black district, Springfield. Dr. Edward H. Hatton was the instructor. Subject for the afternoon and evening X-ray Interpretation. The instructor stressed the fact that radiographs are only shadows of structures exhibiting various degrees of radiopaqueness, and insists that this primary fact be kept in mind in interpretation. Technically correct radiographs from many angles are always essential in questionable cases. Many discussions and errors can only be avoided by better radiographs. He finds the continuity of the Lamina Dura is perhaps the most important factor in the interpretation of radiographs of non-vital teeth. The instructor tries to visualize radiographic evidence into its histological and pathological counterparts. He offers his own and others' experimental evidence in support of the contention that a very high percentage of radiographic negative non-vital teeth will produce bateriologic cultures. Slides and specimens were used in the lectures.

December 14, Adams-Hancock district, Quincy. Dr. Robert Kesel was the instructor. Subject for the afternoon, A Consideration of Fundamental Principles in Root Canal Therapy. A. Diagnosis 1. Patients. a. Those for treatment. b. Those for extraction. 2. Teeth. a. Amenable to treatment. b. Indicated for extraction. 3. Pulpal conditions. a. Pulp tests and symptoms. 4. Periapical conditions. B. Tissue reactions in apical region following pulp removal 1. Lantern slides were used to illustrate this reaction. 2. Lantern slides were used to show successful and unsuccessful results of roof canal treatment. C. Because of the importance of apical tissue reactions, the following principles should be observed: 1. Surgical cleanliness. 2. Thorough mechanical cleansing. 3. Measurement control. 4. Mild medication.

During the evening session the details of the technic used in root canal treatment and filling were discussed in detail. This was a round table discussion. At the present time, Dr. Kesel and his assistants are working on a new instrument which will speed up root canal operations.

December 14, Northwest district, Freeport. Dr. Lon W. Morrey was the instructor. Afternoon session, subject: Children's Dentistry and Public Relations. The instructor told the group that the object of Children's Dentistry is prevention, and that 97% of school children have defective teeth. In the Military and Naval services of this country 20% of the applicants for enlistment are refused because of defective teeth. It is a problem for the dentist to solve, and the public is unaware of the seriousness of the dental conditions of our children. If the dentists do not go ahead and master this problem, it may have an influence in forwarding the panel system.

Thirty-two states have dental divisions in the Department of Health. Since Social Security has become effective, some states have operative dentists in the Dental Department. These dentists travel from one community to another, having their operative units in trailers to take care of children.

During the evening session, Dr. Morrey discussed the following subject: Public relations and the work that the A.D.A. is doing in furnishing plays and readings to schools for the education of children in the care of the teeth. He said these are prepared in such a way that the child has his reading lesson and colored crayon drawings all in one. The child takes the drawings home, and in this way brings the idea of the care of the teeth not only to the child but to the parents as well. Dr. Morey spoke of the material available at the A.D.A. headquarters for dentists in giving talks on any subject pertaining to dentistry. There are also a number of books that may be borrowed from the Library of the A.D.A. for study.

December 17, Kankakee district, Kankakee. Dr. Eli Olech was the instructor. Subject for the afternoon and evening sessions: Minor Oral Surgery of Interest to the General Practitioner. These two sessions consisted of two lantern slide demonstrations, lectures, and a model demonstration. The lectures covered the technic of difficult extractions such as the removal of hypercementosed roots, abnormally curved roots, impacted third molars and the various types of cysts found in the jaws. Also root resections, broken needles, salivary stones, tumors, osteomyelitis and necrosis.

The model demonstration covered the technic of surgically preparing the jaws for the reception of artificial dentures and also neoplasms found about the jaws. These were further supplemented by means of photographs.

Fellow Members of the Illinois State Dental Society: After reading of the splendid work of these different instructors who have gone into various sections of the state during the month of December, we believe you will agree with us that many of the members of the Illinois State Dental Society are enjoying and taking advantage of the Study Club Committee's program. Our instructors are making their lectures as practical as possible. Many of them are doing actual work on patients in the offices of different members of the groups. The Study Club Committee is ready at any and all times to lend its assistance to any of our groups in the securing of instructors for their study club work.

HOMER PEER,
Chairman of Committee.

SEVERAL BETTER

A good story is the one about the boy who left the farm and got a job in the city. He wrote a letter to his brother, who elected to stick by the farm, telling of the joys of city life, in which he said: "Thursday we auto'd out to the country club, where we golfed until dark. Then we motored to the beach, and Fridayed there."

The brother on the farm wrote back: "Yesterday we buggied to town and baseballed all afternoon. Today we muled out to the cornfield and geehawed until sundown. Then we suppered, and then we piped for a while. After that we staircased up to our room and bedsteaded until the clock fived."—*Cokesbury Pi.*

SOCIETY ANNOUNCEMENTS

PEORIA DISTRICT DENTAL SOCIETY

The regular meeting of the Peoria District Dental Society was held at the University Club of Peoria, January 4, 1937. Seventy-five members sat down to a delicious dinner, and among the group were two members from Galesburg and fifteen from Bloomington.

Preceding the business meeting there was a fine program presented by the Copelands Carroling Chorristers, a group of handsome gentlemen. They sang several groups of numbers of popular ballads of yesterday and today.

Following the regular business session, Dr. Robert Gillis of Hammond, Indiana, gave an interesting and practical paper on "Full Denture Construction," with particular discussion on the relation of the condyle head in the glenoid fossae. He supplemented his talk with a series of pictures.

The next meeting will be held the first monday of next month.

DR. E. E. HOAG, Sec.

AN INVITATION FROM THE CLINIC COMMITTEE

The Illinois State Dental Society will hold its Seventy-third Annual Meeting at Springfield, Illinois, May 11, 12, 13, 1937.

The Table Clinic Feature of our meetings is one of the most popular sections and your contribution is earnestly solicited.

Your committee invites you to prepare and give a clinic of your choice in exchange for the many benefits you will receive from others.

Please fill out blank beneath and send to the committee.

Clarke E. Chamberlain, 633-34 Jefferson Building, Peoria, Chairman.

James H. Keith, 636 Church St., Evanston, Director of Lecture Clinics.

John C. McGuire, 636 Church St., Evanston.

B. L. Herzberg, 841 E. 63rd St., Chicago.

Werner J. Gresens, 5944 W. Madison St., Chicago.

S. H. Goodfriend, 1608 Milwaukee Ave., Chicago.

Paul Wilcox, 603 Main St., Evanston.

John Mockus, 3401 S. Halsted St., Chicago.

Robert C. Walker, 523 S. Cicero Ave., Chicago.

S. W. Cotter, 11059 Hale Ave., Chicago.

Edgar W. Swanson, 25 E. Washington St., Chicago.

Gordon A. Smith, 508 Commercial Building, Alton.

N. E. Garrison, 135½ E. Broadway, Centralia.

Thomas E. Prosser, 603 Spivey Building, East St. Louis.

E. B. Strange, Hillsboro.

J. C. Higgason, 305 Temple Building, Danville.

W. B. Tym, Charleston Bank Building, Charleston.

Harry C. Brown, 413 Unity Building, Bloomington.

Van T. McKee, Lebanon.

Ora E. Sterett, Monmouth.

F. L. Markle, Polo.

Carlton Reed, 1009 Talcott Building, Rockford.

Thomas H. Daly, Mount Carmel.

Date.....

I will present a table clinic on Thursday morning, May 13, 1937 at 9 A.M.

Subject of clinic as it is to appear on the official program.....

Name .....

Address .....

Component Society .....

LA SALLE COUNTY DENTAL SOCIETY

The semi-annual meeting of the LaSalle County Dental Society was held at the Kaskaskia Hotel, LaSalle, October 8, 1936.

At the business session the following officers were elected for the ensuing year: President, Dr. Wm. G. Metcalf of Streator; Vice-President, Dr. E. W. Fellows of Seneca; Secretary and Treasurer, Dr. Wright Hedenschoug of Princeton, and Librarian, Dr. H. M. Hutchinson of Tiskilwa. New members elected into the society are: Dr. A. L. Zukowski, Dr. C. E. Radliff, Dr. H. C. Mroczynski of LaSalle, Illinois, Dr. Milton I. Lenz of Utica, Illinois, and Dr. Richard E. Lee of Princeton, Illinois.

The program of the evening was a most interesting one; Dr. Wm. Harper, of Chicago, gave an instructive clinic on Alloy. Mr. Joe Osborne, of the Kraus Dental Laboratory, Peoria, Illinois, gave a comprehensive clinic illustrated with moving pictures, on Properties and Qualities of Vitallium. Dr. Kenneth Penhale, Chicago, gave a fine paper on Oral Surgery.

The next meeting will be announced later.

DR. W. HEDENSCHOUG, Sec.

MACON-MOULTRIE DENTAL SOCIETY

The fourth regular meeting of the Macon-Moultrie Dental Society was held at the Decature Club, Decatur, December 8, 1936. Thirty-three members were present.

Following the regular order of business, Dr. Howard C. Miller of Chicago, gave an excellent talk on some practical phases of "Oral Surgery." At the request of the Program Chairman, Dr. Miller built his discussion around the ten questions which constituted one of the programs offered by the section on Oral Surgery, Radiology and Anesthesia of the Chicago Dental Society at last year's Midwinter meeting. After giving his answer to each question Dr. Miller presented the subject for general discussion.

The next meeting will be held at the Decatur Club January 12, 1937. Dr. R. C. Schlosser of Northwestern University will be the essayist of the evening and his subect will be "Full Dentures."

DR. W. S. MONROE, Sec.

NORTHWEST DISTRICT DENTAL SOCIETY

The regular meeting of the Northwest District Dental Society Study Club was held Monday Afternoon and Evening, December 14, 1936, at the Hotel Freeport. Thirty-one members were present. Dentists from Monroe, Albany and Blanchardville, Wisconsin, were guests of the Study Club.

Dr. Lon Morrey of the American Dental Association Headquarters of Chicago, was the guest speaker and gave a very interesting and instructive lecture on "Children's Dentistry and Public Relations." Dr. Morrey stated that the object of Children's dentistry is prevention, and that 97% of school children have defective teeth. In the Military and Naval Services of this country 20% of applicants for enlistment are refused because of defective teeth.

The next meeting will be announced later.

C. W. DORAN, Sec.

WILL-GRUNDY COUNTY DENTAL SOCIETY

The regular meeting of the Will-Grundy County Dental Society was held at the Louis Joliet Hotel, Joliet, Illinois, December 4, 1936.

Following a fine dinner, the essayist was introduced. Dr. George W. Teuscher of Northwestern University Dental School gave a splendid and instructive talk on "Children's dentistry and Child Management." Dr. Teuscher was assisted by Dr. Borgading, also of Northwestern. A very interesting and helpful discussion followed Dr. Teuscher's paper.

The officers elected for the ensuing year are: President, Dr. F. W. Graham of Mor-

ris; Vice-President, Dr. I. Goldberg of Joliet, Secretary and Treasurer, Dr. Axel C. Eckman of Joliet and Librarian, Dr. E. A. Dainko also of Joliet.

The newly elected members are: Dr. Paul Green and Dr. Clarence Torkin of Joliet, and Dr. J. H. Wallace of Morris.

The next meeting will be held in January in Joliet.

DR. A. C. ECKMAN, Sec.

MADISON COUNTY DISTRICT DENTAL SOCIETY

The regular Study Club meeting of the Madison County District Dental Society was held at the Mineral Springs Hotel, Alton, December 3, 1936.

At the afternoon session Dr. Richard H. Young of Evanston, Illinois gave an interesting paper on Haemotology of the Blood. Following a fine dinner, Dr. Young again took the floor and presented a very helpful talk on The Problem of the Benefits to be derived by Cooperation Between Physician and Dentist. A lively discussion of the subject followed Dr. Young's talk.

The next meeting will be held at the Mineral Springs Hotel, in Alton, February 4, 1937. This is the annual meeting and election of officers. There will also be a Study Club group with Dr. Nylander as the essayist.

DR. G. A. SMITH, Sec.

The Wabash River Dental Society held a meeting at Newton, Illinois, on January 7th.

Dr. Teuscher was in charge of the meeting and his subject was "Children's Dentistry." He presented this subject in such a way that it was very instructive to everyone present.

At a previous meeting held at Olney in October and not reported in these columns, Dr. Winter of Effingham was elected president of the society and Dr. McAllister of Carmi was elected vice-president.

It was voted to hold the next meeting at Robinson on Thursday, March 11th, 1937.

FOX RIVER VALLEY DENTAL SOCIETY

The regular meeting of the Fox River Valley Dental Society was held at the Baker Hotel, St. Charles, December 16th, 1936. There were thirty-nine members present.

Dr. L. Blackman, President, opened the business session following the evening's repast, and appointed the following standing committees for the year:

Program Committee—Chairman, Dr. J. A. Spickerman of DeKalb; Dr. H. J. Hoerner of Elgin, and Dr. J. M. Williams of Aurora.

Membership Committee—Chairman, Dr. B. F. Thiel of Elgin; Dr. R. J. Fanning of Naperville, Dr. H. Matthews of Aurora, Dr. J. A. Steele of Marengo, and Dr. J. E. Griffiths of Batavia.

Clinic Committee—Chairman, Dr. P. Kartheiser of Aurora; Dr. T. A. Fitzpatrick of Bensonville, and Dr. R. G. Nicholson of Aurora.

Golf and Recreation Committee—Chairman, Dr. F. P. Fanning of Genoa; Dr. J. E. Watkins of Aurora, Dr. H. Brinkman of Elgin, and Dr. W. C. Ercanbrack of Elburn.

Two new members were voted upon and accepted by the Society—Dr. John Peffers of Aurora and Dr. Ivan Dickson of Yorkville. Dr. E. Van Buskirk of Aurora was reinstated.

The business of the evening being closed, the guest clinician was introduced by Dr. P. Kartheiser of Aurora. The speaker, Dr. Maynard K. Hines of the College of Dentistry, University of Illinois, gave the members present one of the most interesting clinics that we have enjoyed during the past year. His subject, "New Dental Research and the Diagnosis and Treatment of Vincent's Infection," was very informative and practical and we highly recommend him to other components who may desire to receive information on this subject. Upon the completion of the clinic the members were invited to discuss and ask questions of Dr. Hines.

The next meeting will be held at the Baker Hotel, St. Charles, Ill., January 20th, 1937. V. C. FOSTER, Sec.

OBITUARY

JOHN KEANE CONROY
1870-1936

Past President of the Illinois State Dental Society

Doctor John Keane Conroy died at St. Elizabeth Hospital, Belleville, Ill., on December 21, 1936, at the age of sixty-six years. Pneumonia was responsible for the demise of our beloved Doctor J. K.

Doctor Conroy was born June 4, 1870, on the Government Reservation—Jefferson Barracks, St. Louis, Mo. He received his early education in the Parochial and Public Schools of St. Louis, entering the United States Railway Mail Service which service he discontinued to study dentistry.

He was married on April 26, 1893, to Miss Mary E. Brenneman of Troy, Mo. Three children were born to this union.

The degree of Doctor of Dental Surgery he received in 1900 from the Marion-Sims Dental College, now known as the St. Louis University School of Dentistry. After receiving his degree to practice his chosen profession he went to Belleville in 1901 associating himself with Doctor A. S. Halstead, who was then practising there.

During the years 1907, 1908, and 1909 he commuted between Belleville and St. Louis to teach as Professor of Operative Dentistry at Marion-Sims Dental College.

In 1904 he became a member of The Illinois State Dental Society, and a life member in 1929.

St. Clair District Dental Society was his local component. He was a regular attendant of all meetings and sessions held by this Society, actively engaged in its deliberations and held various offices with credit to himself and benefit to the Society.

St. Clair District feels profoundly the loss sustained through his death for his ever presence at its meetings was an incentive worth emulation. An individual, worth while, possessing a laudable quality of leadership which plainly set the example to all—to, not alone, do as I say—but do as I do. His actions and bearing seemed to say: it is the interest and duty you owe to your fellow practitioners to be present and to take part in the deliberations and functions of your organization.

These ideals he carried with him in his State Society, always alert and ready to work in whatever capacity he was called on to further the interest of the organization he so dearly cherished.

We glory in the fact that in 1935 he had the opportunity to hold the highest office the State Society can confer on an individual member—that of President of our State Dental Society.

Things in life do not all run smoothly at all times, neither do Society functions and deliberations always run smoothly. It was during such an epoch that Doctor Conroy was elected to the presidency of the Illinois State Society. Those in attendance at the Quincy meeting of our State Society during which the Doctor presided can attest to the importance and success of that session. Proud was our membership with his conduct and services in the chair.

The address of the President and the precision during the occupancy of the chair readily brought forth that dominant leadership recognized by those who knew him well. Fear and dissension were quickly dispelled and success for him and his Society were easily recognized. More harmony now exists in our State Society due to his having served as chief executive.

Doctor Conroy was an example of what we should all strive to achieve, a truly professional man. A man with ideals and individualism which reflected in his work. He had that quality which made those who came in contact with him respect and value his counsel.

He had that true concept of professional duties which extends our obligations to society at large. It would indeed be a grave mistake and an injustice if we, who are so well acquainted with the endeavors of organized dentistry to carry the message of Dental Health Education to the public, did not mention Doctor Conroy's name in conjunction with this important undertaking.

With no thought of remuneration or re-

ward Doctor J. K. Conroy personally was responsible for the establishment of dental health practices at St. John's Orphanage. He not alone told the youngsters in this institution how to practice oral hygiene but way beyond this he put the mouths of these children in proper condition and maintained these conditions for them as long as they remained at the Orphanage.

The Division of Dental Health Education of the Illinois Department of Public Health recognized this altruistic work and an article appeared in the Illinois State Dental Journal written by the Doctor at the Division request.

In 1911 the dentists of Belleville organized a local Society and immediately set about to further Public Health Dental Education, better known at that time as Oral Hygiene. Doctor J. K. Conroy was, of course, with us and enthusiastic in the work. He played no small part in the placing of a Dental Health program in our Public Schools. His support and counsel were always available and credit must be given to him for his share in the successful program of Dental Health in the school curriculum and the well equipped clinic in our Junior High School Building in District 118, Belleville.

The loss of one so loyal to the profession and so lovable, kind, and considerate with his family is indeed hard to understand. We ask Mrs. Conroy and the family to accept our deepest and sincerest sympathy.

We are at a loss to find words with which to express ourselves over the death of Doctor Elizabeth who followed her father in the profession and now in death.

Doctor J. K. Conroy's daughter Elizabeth was a member of our Society a number of years prior to her marriage to Capt. R. P. Williams, U. S. Air Corps, whom she married June 22, 1932.

Doctor Elizabeth Conroy was born in Belleville, January 2, 1902. She attended Parochial and Belleville Public Schools and then Ward Belmont, Nashville, Tenn.

She obtained her degree of Doctor of Dental Surgery from Washington University Dental School, June 9, 1925.

During 1925 and 1926 she was intern at the Rochester Dental Dispensary coming back to Belleville after that to practice in the offices of her father and brother, Dr. C. R. Conroy.

Doctor Elizabeth, her husband, Capt. R. P. Williams, and son Thomas Martin Williams, came to the Conroy home to attend the funeral of Elizabeth's father. She was stricken with pneumonia a few days after the burial of her father and died December 31, 1936, just ten days after the death of her father. To make the situation more tragic the son Thomas Martin, twenty-two months old, was also stricken with pneumonia, but at the present he is seemingly out of danger.

It is hard to conceive how and why one family should be visited by death in so drastic a measure. It is indeed with the profoundest feeling of sorrow that we join the family in bewilderment over the loss of father and daughter.

F. A. NEUHOFF.

* * *

ELIZABETH CONROY WILLIAMS

1902-1936

Just ten days after the death of her father, Elizabeth Conroy Williams succumbed to pneumonia on December 31, 1936. She had returned to Belleville with her three year old son to attend the funeral of her father and contracted a cold which developed into pneumonia five days preceding her death.

Dr. Elizabeth Conroy was a graduate dentist and practiced her profession as an associate with her father and brother, Dr. C. R. Conroy, in Belleville, from 1926 to 1932. During this period she was an active member of the Illinois State Dental Society and the American Dental Association, through the St. Clair District Dental Society.

Following her marriage to Captain Randolph Williams, Army aviator, she retired from practice and has resided at Langley Field, Virginia.

Funeral services were held at St. Mary's Catholic church in Belleville, with burial in Arlington National Cemetery.

GEORGE W. TORREY
1871-1936

Dr. George W. Torrey, 800 West 78th Street, Chicago, died suddenly at his home on December 12, 1936. He was born in 1871 at Manchester, Michigan.

He was a graduate of the Medical School of the University of Michigan in 1895 but after a couple of years of medical practice decided to devote his time to dentistry. He received his dental degree from the Chicago College of Dental Surgery in 1899 and for thirty-eight years had been in active practice in the Auburn Park district in Chicago.

He became a member of the State Society and the American Dental Association, through the Chicago Dental Society in 1905, and a Life Member of the State Society in 1930. He was also a charter member of Rainbow Lodge 972, A. F. and A. M.

Surviving are his wife and one daughter, Mrs. Alice Meskimen.

* * *

GUY P. SAVILLE
1878-1936

Guy P. Saville, Joliet, Illinois, died suddenly on December 6th, from a heart attack, while on a visit at the home of his sister in La Grange, Illinois.

Dr. Saville was born at Monmouth, Illinois, in 1878, and had lived in Joliet for 50 years. After graduating from the Joliet Township High school he entered the dental school of the University of Michigan at Ann Arbor, receiving his dental degree in 1902. He practiced his profession in Joliet and held membership in the American Dental Association and the Illinois State Dental Society, through the Will-Grundy component, being a Life Member of the State Society. He was also a member of the Delta Sigma Delta fraternity.

Surviving are his widow, his mother and one sister. Funeral services were held at his home in Joliet and burial in Elmhurst cemetery.

CORRESPONDENCE

December 4, 1937.

Dr. F. B. Clemmer
1971 W. 111th Street
Chicago, Illinois

Dear Doctor Clemmer:

I have seen a copy of the November issue of the ILLINOIS DENTAL JOURNAL which I found most interesting. I would appreciate it if you would send me a copy of this issue and also if you would send a copy to Dr. John W. Whitehead, Southern Berkshire Health Unit, Great Barrington, Massachusetts.

Very truly yours,

Florence B. Hopkins, M. D., D. M. D., Division of Child Hygiene, Dept. of Public Health, Commonwealth of Massachusetts.

Editor—"Thanks a million."

A LETTER

The following is an abstract from a letter received from a western reader of the ILLINOIS DENTAL JOURNAL. We offer it modestly and draw from it no personal acclaim, thankful that our JOURNAL is meeting with favor.

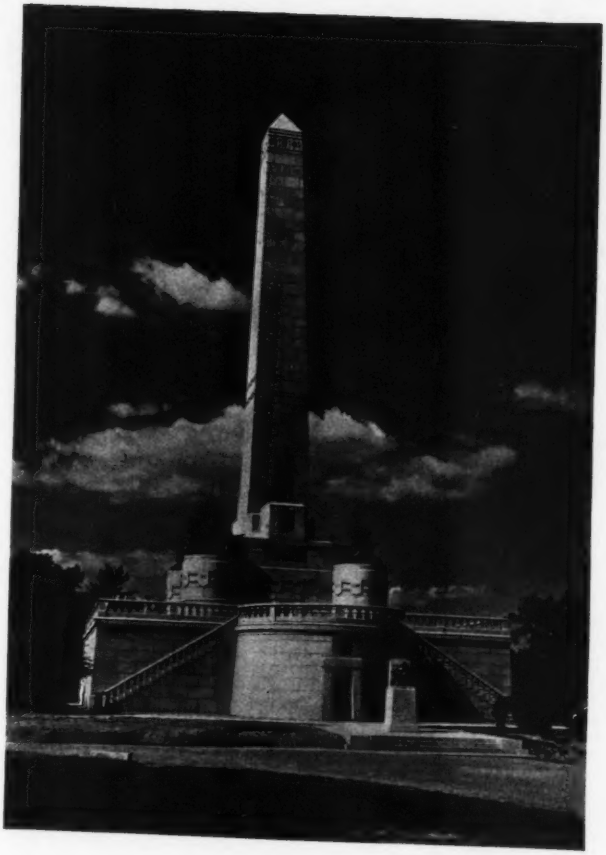
Quote:

"Your journal is certainly an outstanding professional medium. Your personal contributions deserve to be broadcast to the world. I like the general tone and make-up above all others. You have taken the dross out of the usual journal efforts and have retained the essentials which is indicative of intelligent appreciation of what readers want and should have."

The St. Louis University Dental Alumni Association will hold its annual reunion March 31-April 1, 1937, at the School of Dentistry, 3556 Caroline Street, St. Louis, Mo. A most interesting and instructive program is promised.

Publicity Committee.

AMERICAN DENTAL ASSOCIATION
Atlantic City
July 12-13-14-15-16, 1937



Lincoln
Monument
Springfield
Illinois

State
House
Springfield
Illinois

THE CONTROL OF "ACID STOMACH"

By JAMES A. TOBEY, Dr. P. H.

When an individual who has recently partaken of sustenance complains of burning pains in the stomach, accompanied by heartburn and acid eructations, more popularly known as belchings, he will often tell you with considerable assurance that he is suffering from "acidosis." If he has been listening to the ravings and rantings of some of the food faddists, he may attribute this supposed ailment to the unwise consumption of proteins and starches at one meal, or he may give some other equally fantastic and absurd reason.

In this case, as in most instances of self-diagnosis, he will be wrong. If he were really afflicted with that unfortunate but relatively rare condition known as acidosis, or diminution of the reserve supply of fixed alkali in the blood and body fluids, he would not be walking around telling people about it, but would probably be lying prostrate in a hospital bed, surrounded by a flock of doctors and a bevy of nurses. True acidosis is a symptom of certain rather serious maladies. Even in mild form it almost never occurs in the average person, and in any form it is never due to combinations of foods that in themselves are harmless and nutritious.

The common symptoms outlined above are those of gastric hyperacidity, generally known to the layman by the prosaic term "acid stomach." These signs and portents are usually due to an excess of hydrochloric acid in that much abused organ, the human stomach. This excess may in turn be caused by dietary indiscretions, but often it is due to more serious organic troubles.

The normal stomach is naturally acid, although the proper amount of acidity in any individual stomach depends upon certain personal factors, such as the age, sex, and physical condition of its owner and the care and treatment that he gives to this important part of his gastro-intestinal tract. Consider for a moment the function of acid in the stomach, and the true significance of so-called acid stomach will be more apparent.

Whenever food is eaten, some of it, particularly starch, gets a certain amount of preliminary digestion from the saliva in the mouth. The bolus of food is then shot through the esophagus into the stomach, where a lot of little glands immediately begin pouring gastric juice into this organ. This thin light-colored fluid is highly acid, because of its content of hydrochloric acid, but it also contains certain important digestive enzymes.

Nature in its wisdom probably intended this hydrochloric acid partly as a disinfectant of the food, which may contain various germs, but it serves likewise as the chemical which breaks down the enzyme, pepsinogen, into pepsin, which then goes to work on the proteins in the foodstuffs, converting them into the amino acids which can be absorbed and used by the body, chiefly for the building of tissue. This gastric digestion continues for about four hours, although the time may be as short as two hours or as long as seven, depending upon the type of food ingested and other factors. Eventually the processed food, now known as chyme, is discharged through a gate or valve called the pylorus into the upper intestine, where further digestion takes place.

The flow of acid into the stomach is stimulated not only by the mechanical entry of food and liquids, but also by psychic factors. Thus, the odor of savory cooking or the mere thought of appetizing food will start the little glands working. Emotional upsets, such as severe fright, anger, or other unusual excitement will also affect these glands, generally in an adverse way.

An acid stomach may, in fact, be due chiefly to emotional factors. The typical example is the person with a load of worry, whether caused by business strife, domestic conflicts, or other disagreeable events, who rushes out for a hasty meal in a noisy restaurant. Because of his lack of serenity, some irritating incident may likewise occur during the meal, with the result that this combination of annoyances and wor-

ries later produces severe indigestion. Every meal should be a pleasant, leisurely occasion; otherwise, it should be omitted altogether, since it is beter to starve a little than to be dyspeptic.

Some persons are unable to produce any acid at all in their stomachs, a condition scientifically known as achlorhydria. This absence of hydrochloric acid in the gastric secretions may be due to disease, which must of course be diagnosed and treated by competent physicians. Now and then however, persons with achlorhydria live normal, useful lives, without any particular distress.

While self-medication is seldom advisable, occasional mild attacks of gastric hyperacidity can usually be relieved by taking moderate quantities of simple alkalies, such as bicarbonate of soda. If constipation accompanies the symptoms, as is frequently the case, milk of magnesia is helpful for its laxative as well as its alkaline qualities. Acid stomach may often be assuaged merely by drinking a glass of milk, or by consuming a bowl of bread and milk, a highly digestible and nutritious combination.

The chronic sufferer from acid stomach should regard this symptom as a potential danger signal and consult a physician as to its possible cause. The medical practitioner will apply various tests and will gaze at the actual workings of the stomach and intestinal tract by means of the fluroscope, an x-ray device for examining such internal organs. Since hyperacidity is sometimes associated with peptic ulcers, gall-bladder disease, appendicitis, chronic constipation, and other anatomic causes, he can detect these troubles if they exist and see that prompt and proper attention is given to them. If acid stomach is accompanied by a severe and continuous pain in the right side, the patient should send for a physician at once, go to bed, refrain from eating, and under no circumstances take a laxative. Such a pain may, but not necessarily, indicate appendicitis. The person who persists in attempting self-medication of continued acid stomach is likely to make the condition worse rather than beter. Excessive use of ant-acids is harmful, since alkalies taken in too great quantities or over a long period may relieve the immediate symptoms temporarily, but eventually will cause an abnormal flow of acid into the stomach after each use. If, furthermore, the stomach hyperacidity is due to a gastric ulcer, the ulcer will probably become worse during the period of self-medication, whereas it might have been cured sufficiently by prompt medical treatment.

Most cases of acid stomach are not, of course, as serious as this, but are simply fleeting discomforts. Numerous remedies for this type of distress are offered direct to the laity through drug store sales. These advertised commodities are usually simple alkalies, comprised of bicarbonates, bismuth, aromatic oils, and other flavoring materials. They are usually harmless when employed with discretion, but they seldom perform all the wonders ascribed to them by their hyper-enthusiastic promoters, and they usually cost more than they are worth. Baking soda, or bicarbonate, is the cheapest, simplest, and most effective remedy for temporary alleviation of acid stomach.

Persons who are prone to have gastric hyperacidity should choose a bland and soft diet and avoid foods that may irritate their stomachs. Some individuals can eat anything with impunity, while others, particularly the nervous, high-strung types, will be distressed by the slightest deviation from a certain fare.

Foods that impose the least strain on the gastric secretions are milk, cream, butter, toasted bread, pureed vegetables, white meat of chicken, soft-boiled eggs, some fish, and certain well-cooked meats, such as lamb chops. Ice cold or piping hot dishes are unsuitable, while condiments, spices, alcohol, excessive salt, vinegar, and nuts are, in general, to be avoided. Food should be well chewed and not bolted.

Although individuals may have personal idiosyncrasies to certain foods, combinations of various foods are in no way harmful and will not cause trouble unless one of the offending viands is consumed. Thus a person may get hives whenever he eats

strawberries, and he will get them if he partakes of these fruits immersed in cream and sprinkled with sugar, but it is the influence of the strawberries that harms him and not the combination. Most foods are, in fact, more digestible in a mixed diet than when eaten separately. Bread and milk, for example, are more digestible together than is either alone.

The allegation that protein foods, such as meat, cheese, and the like, should not be eaten with starchy foods, such as bread, potatoes, etc., or with fruits, has long since been discredited as the delusion of certain food fakirs. Such beneficial combinations will not cause acid stomach or acidosis or any other complaint. Aside from the fact that it is virtually impossible to find any fods in nature that do not contain both protein and carbohydrate, all foods are so altered and converted in the normal digestive processes that it matters very little what they contain, so long as the body is supplied with its necessary and desirable quota of fats, carbohydrates, minerals, fluids, and vitamins.

The body will be provided with these nutrients if the diet is built around the so-called protective foods, milk and dairy products, green vegetables, fruits, and eggs, with such desirable supplements as bread and cereals, meat, fish, and other common vegetables.

TAKE HEART

It is said that Henry Ford's father did his best to keep him home on the farm. Ford had been mechanically minded since his early teens, and the father was afraid he would become an industrial slave.

Since he was sixteen, Ford had been working for various Detroit industrial concerns and after twelve years of experience he was earning $35 a month by working twelve hours every night.

At forty-one years of age, Ford was still referred to as "Henry Ford, Detroit chauffeur."

We are not what we think we are, but what we think, we are.

—Courtesy of Chicago Herald-Examiner.

DENTAL ECONOMICS

"I do not believe it right or proper to receive a patient for consultation by immediately ushering him into the operating chair. The surgeon does not consult on the operating table. Further, the patient, by the very reason of his being in the chair, expects work to be done. If he only receives advice while sitting there, he does not value it as much as he ought, because he considers every minute in the chair when work is not being done is wasted. Also, a patient is at a disadvantage in the chair. With a strong light in his eyes, a dentist bending over him and a massive array of instruments (in whatever art shades they may be painted) the patient is not at ease. This may be all to the good where a little nimble salesmanship is going to be employed to sell a denture as quickly as possible. But where the patient is asked to come to decisions in an unbiased manner, and agrees to fees he will not regret later, I insist that the dental chair is the last place for such deliberations.

The wishes and conditions of the patient can and ought first to be discussed in a general way, in a consulting room; this being absent, at least in an ordinary chair at a desk side, both patient and dentist being seated. This is not a poor imitation of the consultant, but a good elevation of the dental consultation which is usually regarded as valueless and a waste of time. The public still consults consultants, visits doctors, but pops in for the dentist to have a look round. Only a consultation in the right atmosphere can bring the dentist's knowledge and advice into the same prominence as his operative work. This period should be devoted entirely to the type of discussion that is usually pushed in between a couple of fillings or indulged in by the dentist while the patient wears a rubber dam. Effective, no doubt, but a little one-sided and hardly likely to encourage in the patient an unprejudiced view.

British Dental Journal
November 15, 1935.

A GAME GUY'S PRAYER

Help me to be a sport in this game of life. I don't ask for any place in the lineup; play me anywhere you need me. I only ask for the stuff to give you one hundred per cent of what I've got. If all the hard drives seem to come my way, I thank You for the compliment. Help me to remember that You won't ever let anything come my way that You and I together can't handle. And help me to take the bad breaks as part of the game. Help me to understand that the game is full of knots and knocks and trouble and make me thankful for them. Help me to get so that the harder they come the better I like it.

And help me to always play on the square. No matter what the other players do, help me to come clean. Help me to study the Book so that I'll know the rules, and to study and think a lot about the Greatest Player that ever lived, and other great players that are told about in the Book. If they found out that the best part of the game was helping other guys who were out of luck, help me to find it out, too. Help me to be a regular feller with the other players.

Finally, if fate seems to uppercut me with both hands and I'm laid on the shelf in sickness or old age or something, help me to take that as part of the game, too. Help me not to whimper or squeal that the game was a frame-up or that I had a raw deal.

When in the falling dusk I get the final bell, I ask for no lying complimentary stones. I'd only like to know that You feel I've been a good guy.—*Selected.*

STAYING YOUNG

"Stay young by doing young things!"

Such is the advice of Wallace Beery to those who develop the idea that genus homo is on the down-grade after forty.

No more insidious lie, asserts the character star, was ever perpetrated on a credulous group of near-pessimists.

* * *

BEERY says that life has just begun for him.

"I'll never retire," he asserts. "I'll always be doing something. Maybe pictures, maybe radio, maybe flying—but I'll always be on the move.

"I think that's the secret of life. If a fellow does young things, he'll stay young. They told me flying was a young man's game—and that's the final thing that decided me to learn to fly. I'm mighty grateful that I did. It has added years to my youth.

* * *

"BY DOING young things I don't mean doing foolish things," Beery adds to his philosophy of youth. "I believe in the utmost moderation in all things."

HELIUM TREATMENT FOR ASTHMA MADE CHEAPER

Reduction in the cost of helium treatment for asthma is now possible through improvement in method, Dr. Alvan L. Barach of Columbia University School of Medicine has announced.

Dr. Barach is the originator of the method by which patients suffering from severe asthma are given relief by inhalation of a mixture of oxygen and helium. Because helium is a very light weight gas, it requires only half the effort to breathe the oxygen-helium mixture as to breathe ordinary air, Dr. Barach found. This gives the patient's breathing muscles considerable relief and rest. While not a cure for asthma, the helium treatment has been found an effective remedy in combination with adrenalin.

Helium, however, is an expensive gas, so only a few patients could get the benefit of the treatment. Dr. Barach announced a method of re-using the helium, thus reducing expense. After the gas has left the patient's lungs it is circulated through soda-lime and returned to the apparatus to be used again. —*Science News Letter.*

There is nothing that so lifts a man up as the sense that he has the confidence of his fellows, or so helps him in choosing his path as the sense of great forces pushing him in the right direction.—*C. P. Scott.*

KERNELS AND SHELLS

THE OTHER MAN

By DOUGLAS MALLOCH

Perhaps he may have slipped a bit—
  Well, so have you.
Perhaps some things he ought to quit—
  Well, so should you.
Perhaps he may have faltered—why,
  Why all men do, and so have I.
You must admit—unless you lie,
  That so have you.

Perhaps if we would stop and think,
  Both I and you,
When painting some one black as ink,
  As some folks do,
Perhaps, if we would recollect,
Perfection we would not expect,
But just a man half-way correct,
  Like me and you.

I'm just a man who's fairly good,
  I'm just like you.
I've done some things I never should,
  Perhaps like you.
But, thank the Lord, I've sense to see
  The rest of men with charity;
They're good enough if good as me—
  Say, men like you.

PUN POINTS

All work and no play makes Jack and lots of it.—*Tony Wons.*

"It may not be reverence that causes a man to sit in church with bowed head—he may be asleep.

The world pays a salary for what we know, wages for what we do!

Blood and money have to circulate freely to do any good.

DE CANDLE LIGHT

Ole Massa lighted up de candle
When de night came creepin' on:
De black folks covered up der heads
And waited for de comin' dawn.
An many times we heard de spooks
In de darkness ob de nights,
An we wished dat we, like Massa,
Had a little candle light.

Fo de darkness and de spirits
Kept a'hantin' at de door
An a-trampin' in de bed rooms
On de beds an on de floor.
But Ole Massa nebber heard dem
Case de light scared dem away;
Fo de ghosts and goblins nebber
In de light come out to play.

Den de good folks came to free us
An to gib us human rights,
Den we went and got some candles
Fo de darkness ob de nights.
An now we lib like Massa
Wid a candle by de door,
An de ghosts an spirits nebber
Come to bodder any more.

An we learn to read at night time
'Stead ob sittin' round in fright
And de sign dat we is free men
Is de little candle light.
An I say as we sit readin'
It's de light dat makes us free,
Not de candle on de table
But de light in you and me.

—Bard of Maquon.

Courtesy of the Bulletin of the Chicago Dental Society.

GIVE HIM HIS DIPLOMA

Medical Professor: "What would you do in the case of a person eating poisonous mushrooms?"

Student: "Recommend a change of diet."—Watchman-Examiner.

COMPONENT SOCIETY ROSTER

SOCIETY	PRESIDENT	SECRETARY	ORAL HYGIENE CHAIRMAN	MEETINGS
ADAMS-HANCOCK	O. S. Hufnagel, Clayton	H. R. Farwell, Quincy	E. F. Koetters, Quincy	First Tuesday and Wednesday in November.
G. V. BLACK DISTRICT (Sangamo-Menard-Logan)	Anton Gerster, Springfield	L. W. Neber, Springfield	Ross Bradley, Jacksonville	Second Thursday in each month except July, August and September.
CENTRAL ILLINOIS	A. E. Sihler, Litchfield	B. H. Tedrow, Taylorville	B. F. Dowell, Pana	Third Thursday in Oct. Dec., Feb., Apr., June and August.
CHAMPAIGN DANVILLE	J. H. Myers, Georgetown	C. F. Hausserman, Champaign	G. C. McCann, Danville	Third Thursday of March and October.
CHICAGO	J. B. LaDue, 30 N. Michigan Ave., Chicago	Willis J. Bray, 30 N. Michigan Ave., Chicago	E. D. Coolidge, 25 E. Washington St., Chicago	Third Tuesday of each month except June, July, August and January.
EASTERN ILLINOIS	F. R. Wood, Kansas	Robert Taylor, Villa Grove	G. L. Kennedy, Villa Grove.	April and September.
FOX RIVER VALLEY	Lloyd C. Blackman, Elgin	V. C. Foster, Elgin	G. O. Kerfoot, Batavia	Third Wednesday in each month.
KANKAKEE	C. H. Ortman, Clifton	L. M. Kelly, Kankakee	M. L. Baker, Kankakee	Third Thursday in March and September.
KNOX	H. F. Watts, Galesburg	R. M. Way, Galesburg	M. W. Olson, Galesburg	Third Tuesday in each month except June, July and August.
LA SALLE	Wm. G. Metcalf, Streator	Wright Hedenschong, Princeton	W. G. Metcalf, Streator	April and October.
McDONOUGH-FULTON	E. J. Schaffer, Bushnell	C. D. Eshleman, Macomb	Clyde Eshelman, Macomb	Second week in October.
McLEAN	F. H. Miller, Fairbury	J. J. Holub, Bloomington	B. L. Stevens, Bloomington	First Monday in each month, October to April inclusive.
MACON-MOULTRIE	H. L. Freidinger, Decatur	W. S. Monroe, Decatur	P. B. Berryhill, Decatur	Second Tuesday of each month except May, June, July and August.
MADISON	J. E. Mahoney, Wood River	G. A. Smith, Alton	E. T. Gallagher, Alton	February and October.
NORTHWEST	W. H. Place, Freeport	C. W. Doran, Freeport	C. L. Snyder, Freeport	Second Monday of each month from September to May.
PEORIA DISTRICT	Wilford Peters, Peoria	E. E. Hoag, Peoria	Mark R. Baldwin, Peoria	First Monday of each month except July, August and September.
ROCK ISLAND	Ralph Graham, Annawan	M. J. Nelson, Moline	F. M. Helpenstell, Rock Island	February, May, September and December.
ST. CLAIR	John T. Murphy, East St. Louis	R. C. Kolb, Mascoutah	J. W. Smith, Belleville	Second Thursday in April.
SOUTHERN ILLINOIS	R. R. Baldridge, Centralia	E. M. Travelstead, Harrisburg	W. E. Wagner, Ava.	Semi-Annual — March and October.
WABASH RIVER	E. N. Henderson, Albion	C. K. Shannon, Mt. Carmel	E. N. Henderson, Albion	Annual — Second Wednesday in October.
WARREN	J. Frank Kyler, Monmouth	E. B. Knights, Monmouth	H. W. McMillan, Roseville	Fourth Monday of each month except June, July and August.
WHITESIDE-LEE	H. Lyle Acton, Sterling	Lee O Behrens, Sterling	Z. W. Moss, Dixon	Every two months—around 15th.
WILL-GRUNDY	F. W. Graham, Morris	A. C. Eckman, Joliet	Dale H. Hoge, Joliet	Second Thursday in January, March, May, September, November and December.
WINNEBAGO	A. N. Olson, Rockford	Clyde C. Cole, Rockford	A. A. Hoffman, Rockford	Second Wednesday in each month except June, July, August and September.

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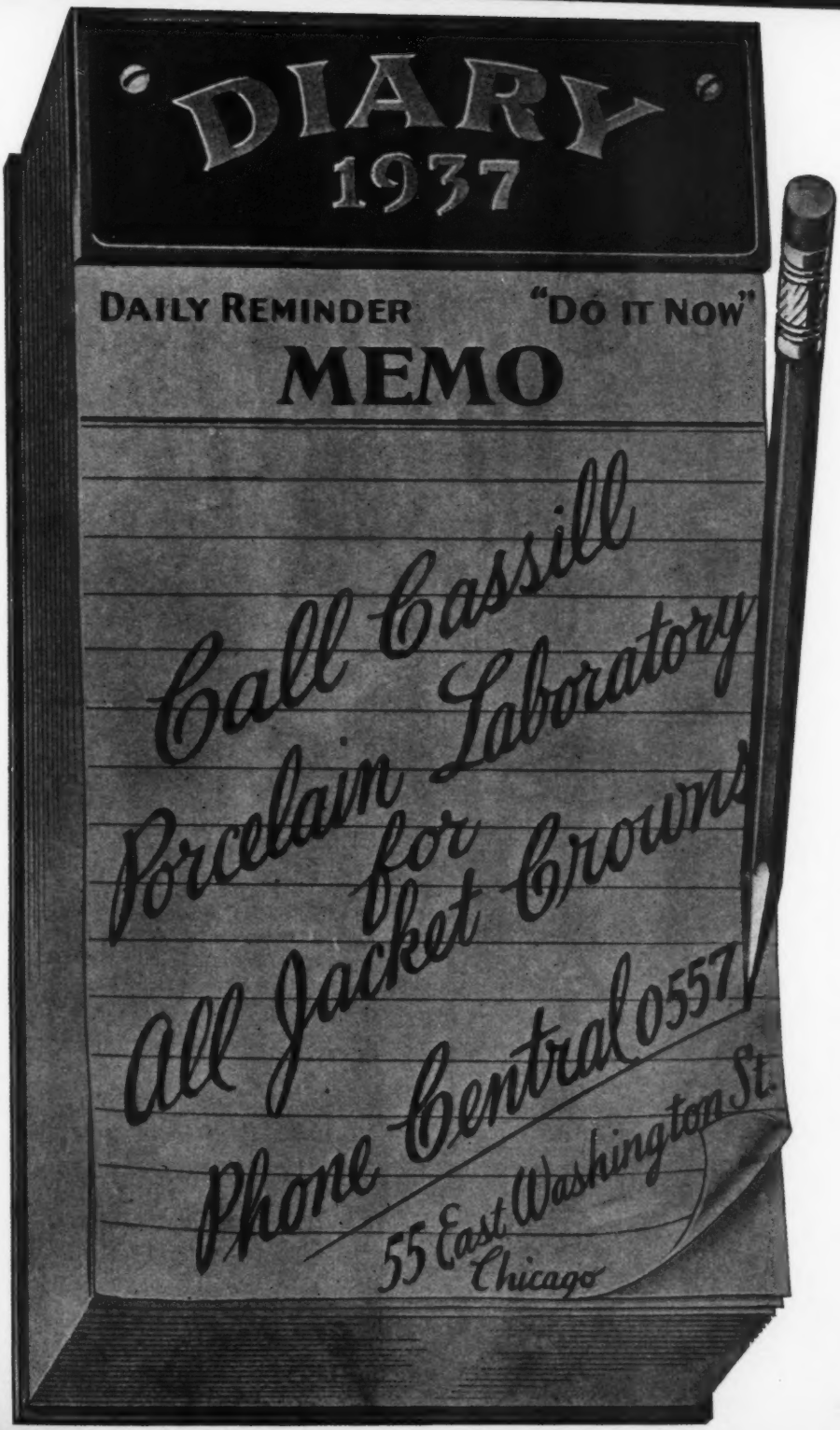
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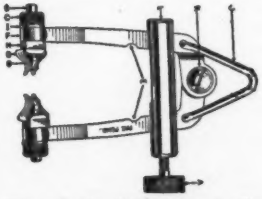

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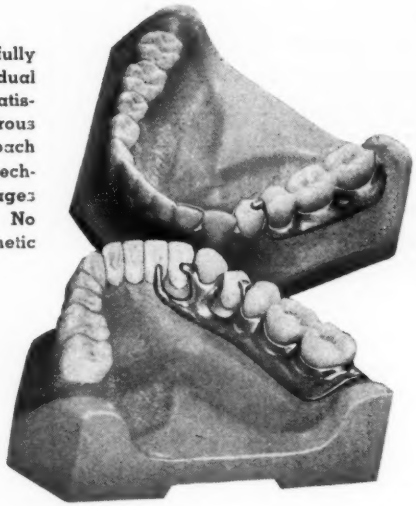

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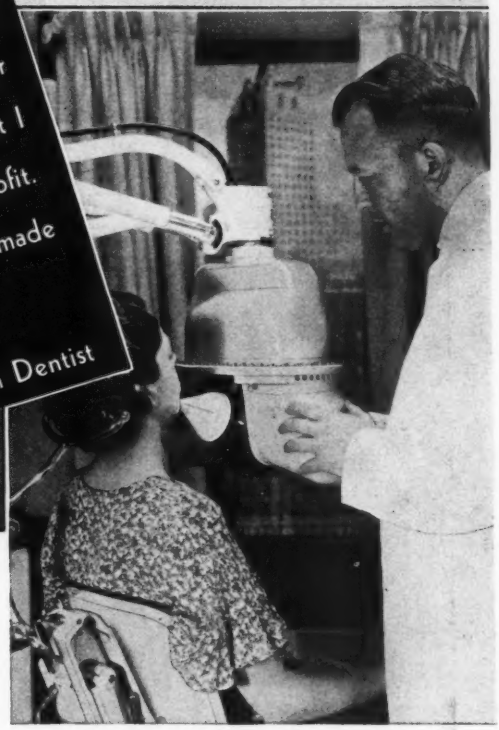

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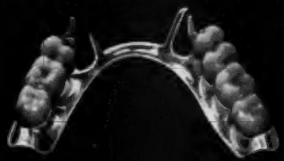

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